

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

**USING EFFECTIVE CONTRACTUAL INCENTIVES TO
OBTAIN SUPERIOR CONTRACTOR PERFORMANCE**

by

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December 2000

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**USING EFFECTIVE CONTRACTUAL INCENTIVES TO OBTAIN SUPERIOR
CONTRACTOR PERFORMANCE**

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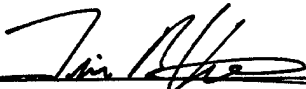
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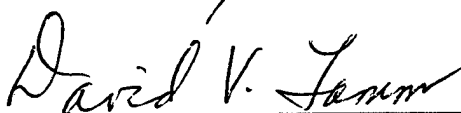


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ABSTRACT

The purpose of this thesis is to provide the reader with the ability to analyze the effectiveness of incentives and to document innovative approaches to incentive contracting that can be applied to Cost-Plus-Award-Fee (CPAF) contracts. While a CPAF contract is a vehicle to obtain products or services needed by the Government, it also acts as a management tool for the awarding entity, which focuses on the impact of meeting or exceeding award criteria. The need for improved procurement effectiveness necessitates the exploration of innovative arrangements.

Contracting officers must take advantage of reforms and become innovative in their approach to provide best value in programs. More efficient ways of doing business are available and must be capitalized upon. Changes in the regulations have given the contracting officer the freedom to innovate. They must use this new freedom in order to meet DoD's expanding requirements with increasingly limited resources.

The use of innovative incentives to contractor performance is beginning a period of renaissance. Numerous Government entities have embraced the use of innovative arrangements in the effort to get goods and services better, faster, and cheaper. The contracting officer must determine which incentives are most effective for a program based upon numerous variables.

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I. INTRODUCTION

...there is a pressing and urgent need to move DoD more rapidly toward the dual strategies embodied in the Revolution in Military Affairs and the Revolution in Business [Affairs]. These combined strategies, if successful, can insure the nation's national security well into the 21st century-against any adversary, and under any multitude of potential combat scenarios... *The Honorable Jacques S. Gansler, Under Secretary of Defense (Acquisition, Technology and Logistics), Address to the National Contract Management Association, Washington, DC, December 3, 1998* [Ref. 1: p. 5]

In order for our military personnel to succeed today and in the future, they must be equipped with the finest possible weapons and equipment. The military must change the way it operates if we are to provide these goods. To accomplish this, the military is changing the way it does business, which has been called a Revolution in Business Affairs (RBA). Progress in the RBA, according to Dr. Jacques S. Gansler, Under Secretary of Defense (USD), (Acquisition, Technology, and Logistics), is critical and urgent to support and pay for the overall shift of resources from maintaining infrastructure to the force effectiveness and modernization imperatives of today's environment. [Ref. 1:p. 5]

Central to the Revolution in Business Affairs is the understanding, analysis, and implementation of innovative contracting incentives that result in meeting and exceeding the Government's program goals. To be successful in this endeavor, the Government must re-examine its relationship with contractors, developing a wide range of innovative contractual incentives that can be employed to ensure the highest quality goods and services quickly and at the best value.

A. AREA OF RESEARCH

The purpose of this thesis is to provide both the reader and the researcher with the knowledge needed to analyze the effectiveness of the Cost-Plus-Award-Fee (CPAF) type of contract when the Government procures goods and services and introduce innovative new approaches to incentive contracting that can be applied to CPAF contracts and other incentive agreements. While a CPAF contract is a vehicle used to obtain products or services needed by the Government, it also acts as a management tool for the awarding entity, which must focus on the impact of meeting or exceeding award criteria performance. The need for improved procurement effectiveness necessitates the exploration of other incentive arrangements that are available to the contracting officer.

Whereas the bulk of most contract incentive arrangements exercise more of a quantitative method of measuring performance, (e.g., rewarding the contractor for not exceeding a specified cost, meeting a given schedule or achieving a stated level of performance), CPAF contracts use an entirely qualitative method for measuring contractor performance. It is a different approach because the CPAF contract determines award based upon the judgment of a Fee Determining Official (FDO) in rewarding the contractor's performance. This proves to be an exceptional motivator for contractors who can earn extra profit by meeting or exceeding award criteria, but tends to be an administrative burden on the Government, which must justify the basis for the award.

This thesis will begin by defining the two basic types of contracts, fixed-price and cost-reimbursement, cover a background and history of CPAF (incentive) contracts, and then analyze the applications and limitations of such a contract. The researcher will also indicate the new and innovative ways the CPAF contract and other incentive arrangements can be used to motivate contractor performance in areas most important to the Government.

The researcher will analyze the spectrum of administration requirements for a CPAF contract to include the performance evaluation criteria, the evaluation periods, Fee Determining Official's actions and the award fee process. The researcher will focus on the exploration of new and innovative incentive arrangements and analyze some cases of these incentives being used by current programs.

B. RESEARCH QUESTIONS

The primary research question of this thesis is: What are the contractual incentives that lead to superior contractor performance? The secondary research questions are as follows:

1. What is the background of contractual incentives?
2. What is the conceptual framework and history of contract incentives used by the Government in CPAF contracts?
3. How is the CPAF contract designed/administered and what are the advantages and disadvantages of using it?

4. How are profit and other incentives used in CPAF contracts and what new incentives can be used to motivate the contractor to perform in areas most important to the Government?
5. What are the advantages and disadvantages of CPAF contracts and how could CPAF contracts be improved?
6. What are the conclusions and recommendations of this research?

C. SCOPE AND METHODOLOGY

This thesis will evaluate the contractual incentives that are used in the course of a CPAF contract and those contract incentives that could be more effective in the business relationship between the Government and its contractors. While numerous topics could be discussed concerning the CPAF contract, this thesis will focus on the incentive relationships that are currently used and to determine if there are more effective incentives that might be used by the Government in meeting its needs more effectively.

The methodology used in this research effort will include several steps. A comprehensive literature search was conducted of books, magazine articles, Internet-based materials and other library sources. The researcher developed a list of innovative incentive arrangements that are available to the contracting officer. And finally, the researcher gathered cases in innovative incentive arrangements and analyzed their strengths, weaknesses and potential for future use for contracting officers.

D. ORGANIZATION OF STUDY

Chapter I. Introduction: Identifies the focus and purpose of the thesis as well as the primary and subsidiary research questions.

Chapter II. Background and Conceptual Framework of the CPAF Contract: Provides the reader with a concise history of the CPAF contract and discusses the award procedure, advantages, and disadvantages of the CPAF contract.

Chapter III. The CPAF Contract: Discusses the design and administration of the CPAF contract. Identifies and discusses the advantages and disadvantages of using the CPAF contract type.

Chapter IV. Profit as an Incentive: Introduces the concepts and historical perspective of contractor motivation. Introduces the concept of profit maximization and extra-contractual motivations. Develops a listing of the new and innovative contract incentives that are available to the contracting officer.

Chapter V. Analysis and Discussion: Introduces new and innovative incentive arrangements that could be used by the contracting officer. Introduces data from numerous programs on incentive arrangements, analyzes the data,

and suggests new incentive arrangements that would result in better value for the Government.

Chapter VI. Conclusions and Recommendations: Summarizes the findings of the research and answers the research questions.

E. BENEFITS OF THE STUDY

This thesis will document the history of the CPAF contract; the current arrangements used in CPAF contracts, incentives and how they can be used in contracting and introduce new incentive arrangements that can be used. The research will also analyze the effectiveness of CPAF contracting at various programs and suggest arrangements that could work more effectively for the Government.

II. BACKGROUND AND CONCEPTUAL FRAMEWORK

...The Government contracted for its first aircraft with the Wright Brothers in July 1909 at a target price of \$25,000 and a target aircraft speed of 40 miles per hour. However, for every mile per hour over the target, the contractor would receive an additional \$2,500; for every mile per hour under the target, the contractor would lose \$2,500. The minimum required speed under the contract was 42 miles per hour, so that a performance incentive reward of \$5,000 was received in addition to the target price of \$25,000 for reaching a speed of 44 miles per hour....[Ref: 2: p. 220]

A. INTRODUCTION

This chapter establishes the historical background and conceptual framework for contract incentives and more specifically, the CPAF contract. The chapter also explains the evolution of contract incentives used by the Government in procuring goods and services. The chapter provides the reader with an understanding of the types of contracts that feature incentives and the traditional uses of those incentives. Although incentives have been used as early as 1909, the modern history of contract incentives begins in the 1940's.

The Wright Brother's contract is evidence that the successful use of contract incentives has been an integral part of the acquisition process for many years. Unfortunately, prior to the 1990's, the acquisition environment was characterized by a complex business relationship between the Government and its contractors that was caused by regulation. Within the context of this relationship, the use of contractual incentives to achieve the Government's desired results did not always meet program goals. In many cases, the Government was forced to pay more than it should because contracting officers

were confined to a set of rules that did not facilitate the necessary innovation.
[Ref. 3: p. 15]

Before the 1990s, adequate budget dollars provided a margin of safety for the inefficiencies inherent in the Government-contractor relationship, including the complexity and regimentation present in the process. The system worked, at an excessively high cost, but began failing when sufficient funds were not available. When declining development and procurement budgets were introduced; these inefficiencies became significant burdens, consuming funds that could be better used. The Government could not continue to pay the high cost of regulation while simultaneously maintaining the necessary procurement programs.

According to a previous Secretary of Defense, William J. Perry, "The layer upon layer of organizations, legislation, regulations, policies and oversight, is an impediment to DoD's adoption of business processes that are characteristic of world-class customers and suppliers today." [Ref. 4] Comprehensive reform was needed to reengineer the acquisition process. Specifically, according to Dr. Perry, "...there must be a carefully planned, fundamental re-engineering or re-invention of each segment of the acquisition process." [Ref. 4] The innovative use of contract incentives is fundamental to the success of this re-engineering.

B. HISTORICAL BACKGROUND

The United States entered World War II with an unparalleled mobilization of military manpower and equipment. This mobilization included the largest

military buildup in the country's history, a daunting challenge for contracting officers. During this period, a number of contractual instruments, such as letters of intent, letter orders, letter contracts and letter purchase orders, were used so that performance on a contract could begin immediately. Cost was secondary to delivery schedule. Later, the Navy developed the Fixed-Price-Incentive (FPI) contract, which provided the contractor with an incentive to keep costs down.

The FPI contract was used after 1943 on large contracts for ships, airframes, and some ordnance items. In the Fall of 1943, the Navy tried to convert as many of its Cost-Plus-Fixed-Fee (CPFF) and fixed-price contracts into incentive contracts, but few contractors were prepared to do so. Only a few were willing to try the incentive contract, provided that a clause was added preventing the Government from renegotiating the contractor's profit. Navy Under Secretary Forrestal spoke highly of the incentive contract:

This kind of contract gives a company a definite incentive to cut its costs. In fact, the heart of the contract is the conviction that American business can perform miracles of low-cost production if it is given a profit incentive for doing so. [Ref. 5: p. 418]

The 1950s were dominated by the use of cost-plus contracting. The goal was to push technology forward rapidly, in order to gain on the Soviets. The Government was moving from the fixed-price, re-determination contracts of the 1940s to an expanded "contract tool box" for the contracting officer. This included the use of the cost-reimbursable, incentive contract for the research and development work being conducted at the time. [Ref. 3: p. 22]

With the widespread use of FPI and Cost-Plus-Incentive-Fee (CPIF) contracts to achieve cost reductions, the Armed Services Procurement

Regulation (ASPR) Committee, in 1958, re-considered the tools available to the Government. This resulted in adopting the concept that “any kind of contract, which promotes the best interest of the United States, may be negotiated.” [Ref. 6]

Elements of award fee provisions were implemented in Government aircraft maintenance and overhaul contracts in the late 1950's. During the years 1958-1961, Professor Frederic M. Scherer, of Harvard University, participated as a member of an Acquisition Research Project that was commissioned by the Ford Foundation to explore the relationship between industry and the Government in weapon systems acquisition. Professor Scherer was the first to publish recommendations for the use of “After the Fact Evaluation in Profit Determination” in 1962. He believed that award fee provisions would be particularly useful in the research and development (R&D) phases of major systems acquisition programs where determining costs, product quality, and schedules in advance of performance was difficult. Because of this, Professor Scherer has been considered the “Father of CPAF contracting.” [Ref. 7: p. 21]

The goal was to furnish financial incentives, not only to reduce costs, but also to “develop and produce weapons even more swiftly and more skillfully.” With a good understanding of what constitutes “good and timely performance,” the Government could provide incentives for contractors to exceed specified delivery schedules and performance criteria, by creating a contract formula that operated to increase fees. [Ref. 7: p.23]

The rationale for the ASPR changes was that because cost-reimbursement type contract fees are earned for best efforts, regardless of degree of success, the contractor should be awarded something. Contracts that call for extensive R&D generally yield small profits. New weapons develop so rapidly that large production runs with contracts that involve higher profit margins are scarce. Contractors should be able to achieve additional rewards for contracts that call for extensive R&D. Since the items were new, however, there were no reasonable standards of performance against which to measure accomplishment or to penalize delinquency. Thus, it was not reasonable to negotiate profit-adjustment formulas that were based on known measures of performance. At the time, this was considered a sophisticated technique and only a broad framework was provided by the ASPR.

In the 1960s, the push to cost-reimbursement contracting fell into disrepute in the face of significant budget overruns. In response, Secretary of Defense Robert S. McNamara instituted Total Package Procurement (TPP), consisting of what were essentially fixed-price contracts for R&D and initial procurement. TPP seemed a good idea, but it failed because the contractor assumed too much risk. TPP contracts on systems such as the F-14 and C-5A failed to constrain costs and eventually had to be rewritten to support system delivery. Thus, fixed-price instruments fell into disuse on major systems until the 1980s. [Ref. 3: p. 27]

In 1967, the ASPR Committee approved the CPAF contract, based on NASA Marshall Spaceflight Center experiments with contract types, and a Navy

test program. The primary objective of the CPAF contract was to promote improved performance by rewarding performance that exceeded a certain minimum standard. [Ref. 7: p. 26]

The CPAF contract offered advantages not then available in other types of contracts. The unilateral determination of award-fee by the Government, not subject to the Disputes clause, provided a new dimension that could provide greater discipline, improved communications, and better contract performance. In addition, CPAF contracts eliminated the developing use of complicated multiple-performance incentives by permitting one overall contract effectiveness incentive. [Ref 7: p. 24]

The 1960s also marked the beginning of an increase in the use of contractor accountability mechanisms. The Government increasingly applied a cost-plus philosophy of pricing to all types of contracts, including those structured as FPI and Firm-Fixed-Price (FFP). In 1962, the "Truth in Negotiations" statute (PL 87-653) (10 USC 2306a) required the certification by contractors of current, accurate, and complete factual cost and pricing data. [Ref. 8: p. 21]

These cost or pricing data requirements were established to ensure that the Government received the same information the contractor had, for use in negotiating a fair and reasonable price. The contractor community believed that the Government's ability to apply standards of judgment, as distinguished from strict accounting principles, was fast disappearing and viewed this as a disincentive to doing business with the Government. [Ref. 8: p. 22]

Increased regulation and the establishment of an acquisition framework by which DoD would conduct the acquisition business characterized the 1970s. Requirements expanded for accountability on both sides (Series 5000 directives for the Government; examination and audit of contractors). In May 1970, Deputy Secretary of Defense David Packard issued a policy memo that established broad guidance in five major areas: management, conceptual development, full-scale development, production, and contracts. The memo clearly reflected Packard's belief that the defense acquisition system needed improvement. A year later, in July 1971, the first DoD Directive, 5000.1, was issued. [Ref. 8: p. 17]

The 1980s marked a more adversarial relationship between the Government and its contractors. Procurement practices assumed a higher profile on the public agenda, driven partly by scandals involving fraud, waste, and abuse. This resulted in greater emphasis on fixed-price contracts, even for R&D efforts. Again, major acquisitions were put on fixed-price contracts, and again, the fixed-price contracts failed.

The combined effects of increased regulatory oversight and the reporting of scandals including excessive overhead charges, unallowable cost billings and defective parts and systems, led to a breakdown of the basic processes required for incentivizing contractor performance during this period. This breakdown was exacerbated by increased regulatory legislation. There were several significant regulatory events and commission reports that directly affected the use of incentives and Government-contractor relations during the 1980s. [Ref. 8: p. 19]

The Competition in Contracting Act, (1984) (PL 98-369) was a landmark law that changed the emphasis from sole source to competition and resulted in the rewrite of twenty-five percent of the FAR. [Ref. 9: p. 17] Changes included reducing the number of exceptions permitting use of noncompetitive procurement to seven circumstances and establishing the Competition Advocate program as a check to ensure maximum emphasis was placed in this area. [Ref. 9: p. 17].

In 1985, the President's Blue Ribbon Commission on Defense Management, the Packard Commission, was established to make recommendations for new reform. In June 1986, the commission published its final report, which included sweeping recommendations. National Security Decision Directive 219 in April 1986, the Goldwater-Nichols Department of Defense Reorganization Act in October 1986, and the Defense Management Report in July 1989 were all designed to implement the Packard Commission recommendations.

The 1990s mark the beginning of real movement in acquisition reform and regulation and guidance critical to redefining the Government-contractor relationship. Major revisions of DoDD 5000.1 and DoD 5000.2-R featured the inclusion of risk management techniques and the elimination of non-value-added Government oversight, where feasible.

A return to cost-reimbursement development contracts in order to more equitably balance risk with contract type where appropriate began during this period. Additionally, the use of fixed-price contracts for commercial items, their most appropriate use, was retained. This shift in the use of contract type being

used appropriately, instead of a one-type fit all approach toward contract type, resulted in contracts wherein the rewards were commensurate with the risks for the contractor and superior performance for Government.

Public Law 101-500 established the Section 800 panel, which was chartered to review all laws affecting DoD procurement and to recommend legislative changes that would allow DoD to reengineer the acquisition process... [Ref. 9: p. 18] Through the support of the Secretary of Defense and his staff in legislative proposals, and with the cooperation of Congress, many of the recommendations were adopted in the Federal Acquisition Streamlining Act (FASA) and others adopted or refined in the Federal Acquisition Reform Act (FARA). [Ref. 9: p. 25]

The Defense Science Board Study on Reform (1994) firmly acknowledged the need to adopt commercial practices as a way of doing business and developed a set of reform initiatives designed to accelerate the required changes. Specifically, it examined industry segments and identified specific barriers to success. [Ref. 10: p. 45]

FASA contained more than 200 sections that changed the laws governing how federal agencies annually acquire almost \$200 billion in goods and services. The act required evaluation of the effectiveness of actions taken to implement FASA. [Ref. 10: p. 46]

Today's concerns for "better, quicker, cheaper" are similar to the issues raised in the 1950s. These issues included the structuring of the risk-reward relationship, the operation of incentives, and the motivation of Government

contractors. This forty-year period can be characterized by two often-conflicting goals: (1) the Government sought to maximize contractor performance and gain the best product for the lowest price and (2) the contractor tried to minimize risk while maximizing profit and delivering to the Government what was expected. [Ref. 5: pp. 415-435]

C. CONCEPTUAL FRAMEWORK

Fixed-Price (FP) and Cost-Reimbursement (CR) are described as the types of contracts used today. Each of these has specific contract types associated with it that range from Cost-Plus-Fixed-Fee contracts at one end of the risk spectrum, with all risk on the Government and Firm-Fixed-Price contracts at the other, with all risk placed upon the contractor. In between are various incentive type agreements. Each type of contract features policies and procedures that the contracting officer must be familiar with to make the best-informed decision as to what type of contract should be used. The clear advantage to having such a large variety of contract types available for use is that it provides flexibility. This flexibility promotes innovation for the contracting officer. [Ref. 7:p. 15]

Fixed-Price contracts are entered into by two or more entities to provide for a supply or service for a predetermined price. In dealing with fixed-price contracts, there are four characteristics: (1) the contractor must deliver (whether it is a product or service, the contractor is obligated to fulfill the requirements of the contract and deliver the product), (2) the final negotiated price is paid (this is

objective in nature and agreed upon in the contract), (3) there is a limit on the buyer's liability as to the amount to be paid (if in production, the contractor's costs exceed the final negotiated price, the contractor loses money, which represents the risk inherent in this type of contract), and (4) there is no limitation concerning profit for the supplier (if the supplier can reduce his costs in producing the product or service, he will increase his profit). [Ref. 3: pp. 85-86]

The Firm-Fixed-Price (FFP) contract anchors one end of the risk spectrum. At this point, the contract has a risk sharing arrangement of 0/100. The sharing arrangement is a numerical value placed upon the division of amount of risk associated with the Government and contractor. In the case of a 0/100 sharing arrangement, the Government accepts 0% while the contractor accepts 100% of the risk. This motivates a contractor to operate efficiently in order to earn a greater amount of profit. The buyer must beware of the fact that there is the potential for the contractor to reduce quality or performance to lower costs. A contractor will engage in these types of projects when uncertainties involved in performance are manageable and known. Fixed-price type contracts are easy to administer for both the Government and contractor since only the price and delivery terms are clearly stated. [Ref. 3:pp. 94-99]

Cost-Reimbursement contracts are the other basic type of contract used. These contracts can be defined as agreements in which payment of all allowable incurred costs and a fee is paid to the contractor. In Cost-Reimbursement contracts, there are four key characteristics: (1) the contractor has to provide best effort, (2) the contractor will be paid for all allowable costs incurred (the

contractor's accounting system must be adequate for determining costs applicable to the contract and usually an audit is done to determine these allowable costs), (3) there is no limit to what the Government will pay for the contract, unless a clause so states, and (4) there are statutory limitations on the amount of allowable fees for CPFF contracts. Because they are reimbursable, there is no true motivation to control costs. Although some types of controls in the form of varying fee motivators can limit costs, the Government pays whatever the contractor spends on providing the product/service. [Ref. 11: p. 19]

A Cost-Plus-Fixed-Fee contract anchors the opposite end of the contracting risk spectrum from Firm-Fixed-Price. At this point, the contract has a risk sharing arrangement of 100/0. This means that the contractor does not share at all and the Government accepts 100% of the risk. The Government assumes all the responsibility for paying for all costs incurred and any fees agreed upon. These types of sharing arrangements exist when the level of contractor effort required is unknown and contractors are not willing to accept the risk of a fixed-price type contract. Activities that focus on this type of contract are research and development oriented or exploratory in nature. They usually involve significant dollar amounts, have work specifications that cannot be precisely defined and the performance uncertainties are too great for Fixed-Price or incentive arrangements. Generally speaking, these types of contracts provide the contractors with only minimum incentive to effectively manage the control of costs. [Ref. 12: p. 341]

The-Cost-Plus-Award Fee contract is a member of the family of cost-reimbursable contracts with a special provision for fee. The CPAF contract is unique in the way that the fee is awarded. The award fee consists of two parts, the base fee, which the contractor receives without regard to performance, and the award fee pool, which the contractor must earn through superior performance. The contract contains a maximum fee that is the combination of the base and award fees. The award fee is an incentive that is used to incentivize the contractor to perform in a way that is superior. The fee is awarded subjectively based upon evaluation criteria stated in the contract. These criteria can be stated in terms of qualities that are important for the program. The Government, in a unilateral decision, determines the award fee. [Ref. 13: pp. 1-5]

A brief review of incentive contracts is appropriate to understand how they operate and their role during the historical timeline previously discussed. There are two basic types: *formula* and *award-fee*. In *formula* contracts, the incentive payment or sharing relationship (profit/loss) depends upon the contractor meeting formula-specific targets. The objective is higher compensation for increased contractor performance and better-cost control.

Historically, these contracts have generally been successful in motivating contractors to meet product or system performance goals; however, they have not been very effective in reducing costs or meeting schedules. This was particularly true during the 1980s, a period of increasingly adversarial relationships between the Government and its contractors, when fixed-price and

fixed-price-incentive (FPI) contracts were frequently imposed for use on large, complex research and development contracts.

In 1987, the General Accounting Office (GAO) conducted a review of sixty-two DoD FPI contracts to determine if this type of contract achieved its intended goals. Their review concluded the following:

- Final costs for the majority of programs fell within 5 percent of the target price negotiated at contract award; 47 percent fell under target and 53 percent fell over target. Of those over target, 21 percent of the contracts exceeded the ceiling price.
- As share ratio increased, the contractor did not demonstrate a greater incentive to meet or under run the target costs.

In short, the incentive relationship resulted in meeting targets as the primary motivation for contractor performance. Clearly, DoD could benefit from more success than merely meeting target costs. Performance and schedule are also important yardsticks for contractor performance. [Ref. 8: pp. 10-15]

An *award-fee* contract allows the contractor to earn additional fees, based on a subjective evaluation of how the contractor performs against criteria set forth in the contract. A fee pool is established at the beginning of the contract and spread among distinct award-fee periods. The contractor may earn all or part of the fee for any period. [Ref. 8: p.21]

D. CONCLUSION

This chapter established the historical background and conceptual framework of the CPAF contract beginning with the use of incentives. The contract discusses regulation and impediments to innovation that existed prior to the 1990's. These incentives, while having been in use as early as 1909, evolved from the incentive type contracts used in the 1940's and become generally more sophisticated since then. The chapter discusses the evolution of the regulatory framework that Government procurement officials have worked under starting in the 1940's and ending in the 1990's with acquisition reform.

The conceptual framework of the CPAF contract began with the discussion of contract types and their terms of use. The inherent allocation of risk shared by the Government and its contractors is discussed in this chapter. Additionally, the effectiveness of these contracts is discussed.

The reader is now ready to move on to the design/administration and application of CPAF contracts with an emphasis on innovative new approaches and the ability of contracting officers to use them.

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III. THE CPAF CONTRACT

...A common denominator in most troubled programs in the past three decades has been a program contractual structure in which the buyer and seller had different and divergent motivations and incentives that forced them to focus more on their own interests rather than on the best interests of the program. Programs that have been successful, on the other hand, invariably are ones in which both parties worked together for a common objective and shared in the success or failure of the program.... [Ref. 10: p. 9]

A. INTRODUCTION

Contracting officers must take advantage of the recent reforms in acquisition and become innovative in their approach if they are to provide best value in Government programs. New and more efficient ways of doing business are available and must be capitalized upon. Recent changes in the regulations have given contracting officers the freedom to innovate. They must use the new freedom effectively if they are to continue meeting DoD's requirements with limited resources.

During the 1990s, reform initiatives, some of which enabled procurement officials to take innovative approaches to the application of incentives, changed the dynamics of the contracting environment. Two recent laws have been significant in reforming acquisition: FASA and FARA. Both are examples of effective legislative change, which allowed contracting officers to innovate. There have also been a number of regulatory changes. They include a rewrite of the Federal Acquisition Regulation (FAR) Part 15 (dealing with how the Government chooses suppliers), FAR Part 12 (Acquisition of Commercial Items),

and FAR Part 13 (Simplified Acquisition Procedures), that have dramatically decreased the rigidity and complexity that once marked the process.

In the past, there has often been a discontinuity between the incentives structured by the Government, which focused on profit as the only motive, and the motivational factors driving the contractor, which are not always based on profit alone. Incentives based on wrong or misunderstood motives are ineffective at best and cause the cancellation of programs through cost overruns at worst. [Ref. 14: p. 102]

In the researcher's opinion, Government must adapt its approach to the business relationship so that it will reward superior performance in a way that is meaningful to the contractor. These changes should target the business relationship between the Government and the contractor in such a way as to produce maximum value for taxpayers, contractors and the organization in pursuit of its mission.

Incentive strategies must take into account not only the perspectives and motivations of not only corporate and policy level managers, but also the functional, or first line managers who have day-to-day responsibility for operating within the specific acquisition regulations and contract provisions in order to be effective. These strategies must be used in conjunction with traditional contract arrangements. Therefore, we must learn about the basic elements that make up the Cost-Plus-Award-Fee contract before introducing new incentive arrangements.

B. ELEMENTS OF AN AWARD FEE CONTRACT

In its simplest form, the CPAF contract will contain an estimated cost, base fee, award fee, award periods, and evaluation criteria. The combination of these elements determines the amount of award the contractor will be paid.

Estimated costs should be negotiated on a fair and equitable basis between the Government and the contractor. The estimate of the costs of performance must be as accurate as possible. An inaccurate estimate of costs can result in cost overruns that will endanger the success of the program. Estimated costs are analogous to the target costs in the Cost-Plus-Incentive-Fee (CPIF) contract.

The base fee is the minimum dollar amount of fee that a contractor can earn on a CPAF contract, which could be zero in some cases. The base fee is designed to provide the contractor with an adequate fee for performing to the minimum standards. Therefore, we can say that the base fee is analogous to the minimum fee on a CPIF contract. The base fee is currently limited to three percent of the estimated costs by regulation. [Ref. 7: p. 12]

The difference between the base fee and the maximum fee is called the award fee pool and represents the amount available for award to the contractor on the basis of periodic evaluations. The award fee pool should be allocated to the evaluation periods in proportion to the level of expected effort required during each period. Portions of the award fee pool that are unearned may be rolled into the next period as the contract calls for. [Ref. 7:p. 26]

The award periods must be long enough to cover sufficient work to enable a reasonable base upon which to develop the evaluation while being short enough to allow feedback to affect contractor performance. An evaluation period of three months may be too short to justify because of the increased administrative burden of the award procedure. An evaluation period of four to six months may be appropriate though. [Ref. 7: p. 27]

C. ESTABLISHING THE EVALUATION CRITERIA

One of the first steps in the award fee plan is to develop the performance evaluation areas and criteria. This is the greatest challenge with Cost-Plus-Award-Fee contracts. These areas will vary considerably in each different Cost-Plus-Award-Fee contract. The evaluation of the contractor's performance is made subjectively based upon evaluators' impressions as to the level of performance achieved by the contractor. These subjective evaluations should motivate the contractor to strive for superior performance to achieve a higher award fee. The areas to be evaluated should be the ones most important to the Government and examples might be:

- business management
- managerial performance
- timeliness/scheduling
- quality
- cost control
- technical performance

The performance evaluation criteria will vary with each Cost-Plus-Award-Fee contract. To give the reader a general idea of what an evaluation criteria list looks like in a Cost-Plus-Award-Fee contract, the researcher has turned to an example from NASA [Ref. 13: pp. 54-58]. This can be seen in Appendix (A). The evaluation criteria and standards for making the award are the basis for determining the final award amount. The evaluation criteria establish the elements of the contractor's performance that will be used by the Government to determine the award amount. The challenge in the CPAF contract lies in the quality of the evaluation criteria structure and the rating plan. The importance of a well-defined evaluation plan cannot be over-emphasized. The evaluation criteria should identify the weighting of various factors and include guidance as to the level of performance required for specific rating levels. [Ref 13: p. 28]

While the evaluation criteria must be fully understood by the contractor, the selection of criteria is not a subject of negotiation in some agencies. The final criteria selection is a unilateral decision made by the Government. The advantage of the unilateral issuance of evaluation criteria is that the Government can change them during contract performance. If it becomes necessary to do so, the Government simply changes the award criteria, redirecting the contractor's efforts. [Ref. 15: pp. 158-162]

Evaluation criteria are subjective but must be fair and reasonable measurements of key performance areas. The criteria must be tailored to the specific needs and requirements of the program. They should also be flexible, allowing for the adaptation of a changing environment, while motivating the

contractor. The contracting officer must be adept in choosing performance criteria that are technical and managerial in nature. [Ref 7: p. 28]

No two evaluations and rating plans will be identical in all respects; each must be tailored to the specific needs and requirements. In addition, evaluation criteria should be tailored to a limited number of key elements that are critical to the project's success. [Ref 7: p. 29]

Because the Government is more interested in the results than the effort, evaluation criteria should be geared to evaluating output rather than input. As such, the criteria selected must represent attainable goals; otherwise contractor motivation can be lost. [Ref 15: p. 46]

There are many methods for establishing rating plans and evaluation criteria. A system must be selected which best fits the needs of the program. The system of standards most commonly used is the adjectival rating system that indexes a performance quality adjective and corresponding explanation to a percentage of the potential award fee available during that period. [Ref 15: p. 47]

D. THE AWARD PROCEDURE

After the Government has identified to the contractor the evaluation areas and criteria, the weightings of each, the measuring system, and the periods of evaluation, the next step is identifying the Fee Determining Official (FDO). The Fee Determining Official will be an individual who maintains a neutral position. This person would normally be at the management level for the Government for major contracts or be the contracting officer for smaller contracts [Ref. 16: p. 36].

A Performance Evaluation Board can be used in conjunction with a Fee Determining Official. The Department of Defense supplement to the FAR states that:

Consideration may be given to constituting a board to evaluate the contractor's performance and determine the amount of the award fee or recommend an amount to the contracting officer.
[Ref. 9: p. 38]

The Performance Evaluation Board is then charged with conducting the subjective evaluation of the contractor's performance. This board will determine the overall grade of the contractor's performance as measured against the established criteria and forwards its recommendation to the Fee Determining Official. The Fee Determining Official makes the actual award fee determination [Ref. 9:p. 38].

NASA continues to be a clear front-runner in expertly administering Cost-Plus-Award-Fee contracts. The researcher has again turned to them to help illustrate how to convert the overall grade/rating of the evaluation period into the actual percentage of the award fee that the contractor will receive from the pool. Appendix (B) it is in a format that is easy to read. [Ref. 13: p. 60] After the Fee Determining Official makes the determination, he will forward a letter to the contractor providing the following information:

- award fee amount
- strengths
- weaknesses
- deficiencies/areas needing improvement

The letter should be constructive, positive, and complete. An example of an award fee determination from a Fee Determining Official to a contractor can be seen in Appendix (C). This example was also taken from NASA. [Ref. 13: p. 66] In the researcher's opinion, there should be an enclosure or added information that clearly identifies any strengths and/or weaknesses in the contractor's performance that were observed by the Fee Determining Official/Performance Evaluation Board for the award fee evaluation period covered. The contractor may argue the findings and provide evidence/support to qualify the actions taken during the evaluation period.

By appropriately structuring the evaluation criteria, the outcome of the evaluation is assured fairness and effectiveness by the Government. In this structured format, the subjective evaluation of the performance will be consistent, fair, easy to determine and clear. The care put into this entire process will ensure both the Government and the contractor that the award fee determination process is equitable and fair. [Ref. 9: pp. 38-40]

The next administrative task is the payment of the award fees to the contractor. The payments should correspond to the evaluation periods. If not, then the incentive for the contractor to improve his performance might be diluted or even completely lost. The contract is then modified to reflect the amount awarded. It is this modification that allows the contractor to submit an invoice for his payment. Upon receipt of the invoice, the Government is then obligated to pay for the services rendered [Ref. 11: p. 109]. The Government should clearly

define how and where the invoices for payment should be sent. An example might read:

The contractor will be paid the final determined award fee after each evaluation period upon submitting a properly prepared invoice in duplicate to (insert office and place). Each invoice shall cite contract number and period of evaluation invoiced with appropriate total monetary amount [Ref. 13: p. 115].

Administering a Cost-Plus-Award-Fee contract can be a significant burden. Both the Government and contractor share in this increased administrative burden, as it is the nature of the contract. In using an FFP contract, the two parties would negotiate the contract, the contractor would produce/supply the product/service and the Government would pay the contractor. In a CPAF type contract, a lot more is involved.

The Cost-Plus-Award-Fee contract does afford some added benefits though. Ultimately, better communications are likely to occur between the contractor and the Government. In response to that increased level of communication, both the Government and contractor will realize better communication internally among their respective personnel. The most important aspect of a Cost-Plus-Award-Fee contract is the preparation, communication and execution of clearly defined performance-evaluating criteria. When these criteria are communicated properly, the Government receives superior performance and the contractor receives a meaningful reward. When the communication is imperfect, the contractor focuses on unimportant goals and receives no reward. [Ref. 13: p. 4]

To be successful in executing a CPAF contract, both the Government and the contractor must ensure that they have adequate time and resources to properly administer such a contract. The final result desired is to maximize award fee for the contractor and optimize performance of the contract for the Government. A CPAF contract provides a flexible management tool that is useful for both the contractor and the Government. [Ref. 13: p. 4]

Evaluation criteria define the relative importance to the Government of each area of contract performance. Those criteria are contained in an award-fee plan that is normally an attachment to the contract. The Government has the unilateral right to change the award-fee plan before any award-fee period begins. This is done to ensure that the various aspects of performance, including cost, schedule, technical, and other uncertainties encountered and addressed during contract performance, are addressed in accordance with the Government's priorities. [Ref. 13: p. 25]

CPAF contracts do not have the objective performance measurements needed for structuring incentive type contracts. They are subjective. [Ref. 10:p. 89] CPAF contracts include an estimated cost that is the Government's maximum cost exposure for the contract and a base fee, which neither varies with performance nor is subject to the evaluation process. This base fee portion is equivalent to the fixed-fee in a CPFF contract. The base fee is usually paid on a monthly basis and can be zero. An award fee is subjectively determined on a periodic basis and measured against the performance criteria in the contract. [Ref. 13: p. 1]

The total award fee pool is divided into segments, which are divided over the period of the contract. Each of these segments is individually evaluated and an award is made after each period. The award fee can be earned in whole or in part or not at all as determined by the subjective evaluation of the performance criteria. [Ref. 11: pp. 107-109]

The evaluation criteria and subjective measures of effectiveness should be addressed in detail at the beginning of the contracting process. As each award fee period begins, the Government should notify the contract as to what areas are specifically being focused on for that period. The Fee Determining Official will track the performance and rate it against the established criteria. In doing so, the Fee Determining Official will assign values in the form of points or percentages. Those points or percentages will be the factor as to how much of the award fee pool the contractor will receive for that period. The award fee is usually determined on a quarterly or semi-annual basis. The contractor will also receive a summary of the subjective evaluation. This will allow the contractor to focus on areas he did not do too well on for future award periods and also give him the ability to appeal the finding to the Fee Determining Official. [Ref. 11: pp. 107-109]

E. THE APPLICATION OF CPAF CONTRACTS

Cost-Plus-Award-Fee contracts provide a management tool that is flexible and motivates contractors to improve their performance. Cost-Plus-Award-Fee contracts are particularly appropriate for support services that are generally

associated with base maintenance and operations support contracts [Ref. 17: p.

8]. Cost-Plus-Award-Fee contracts are appropriately used for:

- Level of effort contracts for performance of services where mission feasibility is established but measurement of achievement must be by subjective evaluation rather than objective measurement and,
 - Work which would have been placed under another type of contract if the performance objectives could be expressed in advance by definite milestones, targets or goals susceptible of measuring actual performance. [Ref. 18: p. 3-405.5(b)]
- Cost-Plus-Award-Fee contracts are not used:
- As an administrative technique to avoid Cost-Plus-Fixed-Fee contracts when the criteria for Cost-Plus-Fixed-Fee contracts apply, nor shall a Cost-Plus-Award-Fee contract be used to avoid the effort of establishing objective targets so as to make feasible use of a Cost-Plus-Incentive-Fee type contract.
 - Where the contract amount, period of performance or the benefits expected are insufficient to warrant additional administrative effort or cost. [Ref. 18: p. 3-405.5(g)]

While no regulations have given a specific size or type of contract that must be in the form of CPAF, it is the researcher's opinion that the Government should not enter into a CPAF contract where the benefits of doing so don't outweigh the costs. CPAF contracts are especially useful in the procurement of support services associated with base maintenance activities and the high-tech programs adopted by NASA. [Ref 13: p. 36]

F. CONCLUSION

In this chapter we have discussed the advantages of acquisition reform and its affect on contracting officers. We have identified the initiatives that allow

procurement officials to innovate in their approach to contract incentives. The Government must adapt its approach to business relationships to take advantage of these opportunities.

We have discussed the basic elements of the CPAF contract to include the estimated cost, base fee, and award fees. We have identified the purpose of the award periods and evaluation criteria. The evaluation criteria must be meaningful in their make up and communication in order to effectively motivate the contractor.

This chapter has introduced the concept of the Fee Determining Official and the method and impact of the award procedure. The contractor must fully understand the application of the award criteria and communicate with the FDO in order for the process to be effective.

When properly administered, the CPAF contract can be a powerful motivator to contractor performance. Conversely, the contract type can be somewhat burdensome administratively.

In the next chapter, we will discuss the profit motive and explore new incentive agreements that are available to the contracting officer.

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IV. ANALYSIS OF ALTERNATIVE INCENTIVES

...CPAF contracts at NASA do not provide sufficient incentives for contractors to deliver quality products or services on time and within budget. In addition, award fee evaluations have not always been tied closely to contractor performance, including performance of hardware after acceptance by NASA. As a result, performance was not considered and NASA assumed all the risk associated with the deliver of products or services, including any cost overruns. According to NASA, in the past some CPAF contracts guaranteed a substantial fee payment, called a base fee, regardless of how the contractor performed. [Ref. 19: p. 1]

A. INTRODUCTION

Effective contractor motivation is a critical factor in the successful completion of any Government procurement action. The contractor, like the individual, works with available resources and acts upon incentives. Therefore, we can say that incorporation of the most effective motivators combined with the most effective method of measuring contractor performance will result in superior performance. The award fee contract can be considered a continuous motivational method spanning the life of the contract because the contractor receives continuous feedback on its performance and has an opportunity to improve, earning more of the available incentive. This differs from other types of contracts in that the span of control and changes in the type of control are limited once the other types of contracts are awarded. The incentive is not based on a simple formula, it is subjective in nature.

Government motivation can be increased by the use of an award fee contract in that the Government still has the power to significantly influence and motivate the contractor, even after the contract has been awarded. The

Government must stay involved in the progress being made by the contractor in order to accurately grade the contractor's performance. This continuous surveillance is key to maintaining control of the program's progress. More specifically, using the evaluation criteria, the Government can select the key areas they would like to influence and direct, resulting in the appropriate amount of contractor effort in the area desired.

The cost-plus portion of the CPAF contract may work as a disincentive to contractor performance in terms of cost. This is because all reasonable, allowable and allocable costs will be paid by the Government. The contractor, given the choice between exerting extra effort to cut costs and billing the Government for more expensive methods of fulfilling the requirement, may choose the latter, to the detriment of both parties. Best effort is the only requirement that the contractor must meet when utilizing the cost-plus method of contracting.

Developing effective contractor performance incentives is a continual process that adapts to changes in the life cycle of the program and the contractor's performance over the life of the contract. Successful incentives also depend upon understanding the type of work (hardware, software, supplies, services), the phase of the work (development, production, sustainment), the goals of the Government and the contractor organizations, and the respective players who enter into an agreement.

Achievement of the final result, be it a product or service, involves a constant series of tradeoffs. Achieving the right balance among the tradeoffs

depends on effectively translating the program's goals into an effective contract strategy. Success depends on understanding differing motivations and developing balance in the incentive relationship between the contractor and the Government.

Achieving balance requires identifying the correct incentives and communicating them effectively to all parties. The Government communicates its goals to the contractor's management through the contract and the award fee plan. Contractor management communicates the goals to its employees through its organization. The objective is to employ the right incentives to effectively motivate not only the organization, but also each employee. [Ref. 20: p. 19]

B. EFFECTIVE MOTIVATION

Victor Vroos, a noted behavioralist, stated that the strength of a person's desire or aversion for "something" is founded not in its intrinsic properties, but on the anticipated satisfaction or dissatisfaction associated with other outcomes to which they are expected to lead. [Ref. 21: p. 76]

Information on the contractor's objectives and constraints can be obtained through items such as cost and pricing data. In addition, knowledge of labor supply, interest rates, stock prices, and other business endeavors can give the Government insight into the contractor's financial position and production capabilities. Trade journals can provide information on the contractor's environment.

It is widely accepted that factors other than profit have a profound influence on contractor motivation. Profit can be viewed as a satisfier rather than a motivator. Contractors, in most cases, will perform without a certain profit level. Once that level of profit is achieved they may not increase performance with additional profits alone. Although award fee provides additional profit for increased levels of performance, other motivational factors are involved. [Ref. 22: p. 38]

Award fee contracting relies on more than just the profit motive for motivating the contractor. The evaluations conducted by the Government on the specified basis formally advises the contractor and the employees of the contractor on the amount of fee awarded as well as the reasons for the award or the absence of the award. These evaluations are reinforcement of the contractor's performance or a penalty. This type of evaluation has an effect on the pride of an organization, the managers, and the workers and can act as an additional incentive. Thus, without considering fee to the contractor, the evaluation can have a motivating impact on the managers and employees. [Ref. 22: p. 109]

The effective use of the contractor evaluation process in the Cost-Plus-Award-Fee contract allows the manager and workers of the contractor to see what the Government likes and dislikes. It also gives the contractor an incentive to make the decisions and undertake the risk that is perceived as most beneficial to the evaluators. [Ref. 13: p. 12]

C. CONTRACTOR OBJECTIVES

Objectives of the Government and the contractors cannot be pegged to a single, all-encompassing objective; rather there are multiple objectives on the part of each party. The trouble is that in all too many cases only an objective is incentivized and other important objectives are ignored. A disadvantage noted concerning incentive contracts is the Government's inability to incentivize simultaneously all the important aspects of a contract. When a single one is incentivized, usually the Government allows the requirements of other elements to slip. [Ref. 23: p. 4] This is a situation wherein the elements of an award fee can be of greater success than other types of incentives. Several performance elements can be incentivized simultaneously with an award fee, overcoming one of the biggest disadvantages of other contract types. [Ref. 23: p. 4]

Contractor objectives can be divided into contractual objectives and long-term corporate goals, or extra-contractual objectives. Specific objectives of the contractor usually include earning profits in the short and long run, ensuring continuous company growth, providing a quality product, maintaining or increasing market share, developing new skills, guaranteeing follow-on work, minimizing risk, controlling its own destiny, safeguarding proprietary interests utilizing excess capacity, and improving cash flow. Review of past performance can identify objectives that were obtained previously. However, most research in the field of determining contractor objectives was conducted by asking contractors to list their most important objectives. [Ref. 24: p.15]

Once the prioritized objectives of the contractor have been identified, contractor performance will be improved if the Government helps in the achievement of these objectives. Award fee can be used as an incentive for many of the common objectives noted. For example, if the contractor set up his operation to produce a higher quality product than required by the minimum specifications of the Government, in an attempt to receive more award fee, this may allow the use of excess capacity. The award fee could provide additional funds to pursue more efficient technology. Award fees can improve cash flow if the amount of the award fee exceeds the additional cost of the risk undertaken. Indirectly, achieving a top quality product could possibly lead to follow on work, because the final product is so much better than the competition offers. [Ref. 25: p. 40]

D. GOVERNMENT OBJECTIVES

It is critical to understand who defines program goals and desired outcomes; that is, who are the stakeholders that influence contract action? This can be the users, the program office, or the corporate structure. In general, the defense “buyer” is usually a hierarchy and not a single agent.

Successful performance depends on balancing the goals of the basic Government-contractor relationship, understanding the desired outcomes, focusing on the areas and factors critical to the outcome of the particular procurement, and implementing an incentive relationship to support it. This complex balancing act requires focusing on many areas of performance to

incentivize, such as reducing unit cost, exceeding performance requirements, reducing total cost, reducing schedule, and/or exceeding operational and maintenance requirements. The basic requirement is to meet cost, schedule and performance goals.

The primary Government-contractor objective is to establish a business relationship that requires the contractor to assume normal business risks and provides the contractor with incentives for increased efficiency or performance that results in lower costs. This saves the Government money through lower prices and operating costs. The challenge is to focus on the right incentive(s) after carefully analyzing the Government's needs and the contractor's business environment.

The following can be considered critical motivators of Government behavior: [Ref. 26: p. 10]

- Achieve:
 - Cost goals: Maximize budget for instant and total lifecycle costs.
 - Schedule goals: User defined date.
 - Performance goals: User defined requirement.
- Exceed:
 - Cost goals: Maximize budget for instant and total lifecycle costs
 - Schedule goals: User defined date.
 - Performance goals: User-defined requirement.
- Other:

- Socioeconomic (e.g. small business goals)
- Budget (requirements vs. available dollars)
- Political (requirements vs. political drivers)

Organizational and personal goals can directly affect the business relationship. They can become a determining factor, driving what is incentivized, and how it is incentivized. [Ref. 26: p.15]

E. AIR FORCE STUDY ON INCENTIVES

A recent Air Force study examined the effectiveness of schedule incentives for different players associated with project schedules, from the time of contract award until delivery of the first production item. [Ref. 27: p.5] In the study, four players were surveyed: the users, corporate Air Force, the program offices, and the contractors. They were asked to report the incentives that they had experienced to meet or exceed various project objectives. The motivation of the players and their incentives provide insight into how programs and contractors are incentivized and what is incentivized. Approximately sixty projects were reviewed. [Ref. 27: p. 15]

The study found that the users were strongly motivated to meet a project's planned cost, schedule, and performance goals. They also had a significant motivation to exceed project goals in all aspects of cost, schedule, performance, and reliability. [Ref. 27: p.27]

At the Air Force corporate level, achieving superior technical performance rated first, followed by lowering acquisition cost, and lowering operating and

support costs. The study revealed few incentives for reducing schedule in the majority of development projects. From a corporate perspective, the principals—Mission Area Directors (MAD), Program Element Monitors (PEM), and action officers—did not view shortening cycle time as an important objective, as compared to the other project objectives. [Ref. 27: pp.2-7]

Within the program office, superior technical performance was rated as the primary objective and shortening schedule was rated last. The program offices and the individual project managers viewed reducing schedule time to operational capability as the lowest of the four program objectives. When asked to report if there were any incentives for program offices to achieve or exceed objectives, very few responses indicated any specific structured or formalized motivating factor. [Ref. 27: p. 28]

In addition, twenty percent of the respondents stated that exceeding the objectives had little or no impact on their performance ratings. Many of the senior acquisition officers stated that it was much more important to meet the expected schedule, no matter how long, than to try to achieve a shorter schedule and risk not fulfilling it. Success was meeting the objective, not exceeding it. [Ref. 27: p. 29]

The majority of program offices reported relatively few contract-based incentives for either on-time or early completion of a major milestone or project. Two-thirds of all projects included no financial incentives for on-time completion. Seventy-five percent reported no incentive for early completion. [Ref. 27: p. 21]

Many of the contracts were award-fee contracts with schedule as one of the evaluation factors. A contractor could receive all or nearly all of the incentive due to considerations other than schedule. Contractors earn on average 93 percent of the available award-fee, according to the study. The award-fee represents the results of the company's response to the program office's desire or concerns; it is often used as a measure of the program status. Incentives for schedule, for example, are based on the schedule, as it exists at evaluation time, not necessarily the originally contracted schedule. [Ref. 27: p. 31]

According to the contractors, the bottom-line benefits of exceeding various project goals on the company included follow-on business (past performance) and increased company stature. Many contracts did not include any incentives for exceeding program objectives. Most incentives appeared to be based on meeting the stated project goals and not exceeding them. Incentives that were provided focused on cost and depended largely on the type of contract. On fixed-price contracts, there was a reported net incentive to reduce cost by reducing schedule. On cost-reimbursement contracts, there was little incentive to exceed project goals. [Ref. 27: p.42]

The Air Force study summarized the findings as follows: [Ref. 27: p. 47]

- The lack of personal and organizational incentives for defense contractors, Program Offices, and the Pentagon indicates that the goal is to meet project objectives, not to exceed them.
- Reducing schedules is often the least important of the project objectives.

- In the contracting phase, the original DoD project schedule is the central factor in determining the contract schedule; contractors have no incentive to bid anything other than what the Government expects.

Employees need to be able to understand the incentive relationship that's on contract. Let's examine this same area from the employee perception of effectiveness. A 1981 report from the Army Procurement Research Office, based on interviews and research at that time, provides insight to findings that are both intuitive and in line with current understanding of performance motivators. [Ref. 28: p.2]

Government employees believed that the most effective incentive provided to contractors was a guarantee of future business, followed by program continuity, profit, and fair and equitable contracts. They believed the weakest incentives were non-monetary rewards, followed by the possibility of default, multiple incentives, award-fees, and "jawboning." [Ref. 28: p. 5]

Industry believed the four strongest incentives were a fair and equitable contract, guarantee of future business, program continuity, and appropriate contract type. Profit, improved cash flow and long-term funded contracts were next in importance. The lowest regard was for non-monetary awards, followed by Government-funded capital investment, the possibility of default and monetary loss for poor performance, and "jawboning." [Ref. 28: p. 7]

Within both the Government and industry samples, there were differences depending upon whether the contract was for R&D or for production since this affected the approach to the incentive, its goal, and its effectiveness. Smaller

firms were more interested in program continuity. Larger businesses were influenced more by multiple incentives and long-term funded contracts. [Ref. 28: p.9]

F. CONTRACTUAL INCENTIVES:

In an effort to document new and innovative approaches to incentivizing contractors, the researcher has compiled a group of incentive arrangements. This group of incentives is the product of the research effort in order to determine what incentives a contracting officer might use. While the incentives are not exhaustive in nature, they do represent a number of which the contracting officer might be unaware.

- In Award Term Contracting, the Government establishes objective performance parameters in the underlying contract and announces upfront that it intends to shorten or lengthen the period of contract performance (minimum and maximum), based on the contractor's performance against those performance parameters.
- In Award Fee Contracting, the award fee can motivate the contractor to excellent performance. The Government judgmentally determines and measures a contractor's performance within specifically designated performance categories, evaluation criteria, and evaluation periods. The process is defined in an award-fee plan.
- In Business Case Negotiation of Intellectual Property, the Government and the contractor execute a contract with intellectual property terms and conditions tailored to the procurement and the business case. It enables

the contractor to develop and exploit intellectual property developed under Government contract and with government or mixed contractor-Government funds.

- In Commercial-Government Technology Integration, contracts for technology opportunities that industry is already pursuing for commercial application are supported. In this method, the Government rides on industry's much shorter development and fielding times and increased quality, driven by competitive market forces and first-to-market goals.
- In the Composite Facility Integrated Award Fee Establish incentive arrangement, there are pre-negotiated award fee layers (for major programs) at a single contractor facility that are combined into a facility-wide award fee pool.
- The Contingent Contracting Contingent Contract recognizes that two parties with common interests can often fail to reach agreement because of different expectations about the outcome of terms and conditions that form part of the agreement. Contingent contracts provide an incentive to execute a successful business relationship that recognizes the needs of both parties. The terms are not finalized until the uncertain event in question actually occurs.
- In the Commercial Products Produced to Government Requirements arrangement, commercial items specifically defined to include products are produced to Government requirements. The commercial source

regularly produces similar products to the specifications of its commercial customers using the same production facilities and methods.

- The Early Completion Bonus arrangement incentivizes early delivery of product or service with a bonus payment.
- In the Fast Cash incentive arrangement, the Government conveys the outcome desired to the contractor in terms of performance and/or cost. The contractor conveys his minimum expected return and the basis for such performance. The Government and contractor partner in developing the price and payment terms that best meets each party's expectations.
- The Graduated Award Fee incentive arrangement is an approach to award fees that layers incentive elements.
- The Incentives for Government Organizations incentive arrangement provides incentives for government acquisition programs and organizations.
- The Incremental Award Fee arrangement is a derivative of the standard award fee structure. The incentive consists of two areas—performance that is subjective and effort that is discrete.
- The Interest-Based Negotiation arrangement changes the way we negotiate price. This method uses an interest-based negotiations approach instead of focusing only on price or cost-based negotiations.
- In the Joint Venture Shared Responsibility incentive arrangement, the Government and contractor share in the cost of developing and producing a product or service. This can result in the development of a contractual

relationship along the lines of a commercial arrangement that could reside outside the FAR.

- In Long-Term Award Contracting (production), the contractor is rewarded for meeting or exceeding performance goals with a predetermined amount of future or follow-on business.
- In the Ownership Contracting During Requirements Development incentive arrangement, the Government thinks through the ultimate results it seeks and states the requirement in a way that incentivizes the contractor to drive for that result. The Government should contract for the output or problem it wants solved and not for an interim step or Government-proposed solution.
- When using Performance-Based Incentives, performance-based incentives are targeted at rewarding superior performance and penalizing substandard performance.
- In the Performance-Based Payments (PBP) arrangement, which is common in commercial terms and conditions, performance-based payments are an effective means of providing incentives through contract financing with reduced burden to both the Government and industry. In this method, the Government pays the contractor when the contractor reaches predetermined performance criteria.
- In the Reduction in Total Overhead Costs arrangement, reduced Total Overhead Costs (TOC) over program life is achieved by focusing on instant and follow-on contracts. Most effective in initial stages of program

where there is a reasonable ability to model TOC, and sustainment costs are large in relation to development and production.

- In the Reliability Improvement Warranty (RIW) arrangement, a reliability improvement warranty is used to motivate the contractor to design and produce equipment with lower failure rates and lower repair costs during operational use.
- In the Share in Savings (SIS) arrangement, the contractor is encouraged to apply ingenuity and innovation to get the work done quickly and efficiently and share in the savings attributed to their planning and execution with the Government.
- The Shared Infrastructure Contracting for Government furnished items arrangement allows the contractor unrestricted rent-free use of infrastructure for both commercial and government business in exchange for the contractor's willingness to upgrade the property to reflect advances in technology.
- The Subcontractor Profit/Fee Pools is an approach to establish subcontractor/fee pools in the prime contract for the prime to reward/encourage performance of critical subcontractors.
- In the Subcontractor Value Focused Relationship, the prime contractor is responsible for establishing a supplier network that will maximize the introduction of commercial sources into the overall program structure. Rewards are then shared between the prime and selected suppliers down to the third tier.

- The Total System Performance Responsibility (TSPR) concept involves a single contractor assuming complete responsibility for overall performance in the weapon system's field of operations and sustainment.
- The Tournament Contracting Competition is structured as an auction and prototype competition, with the winner awarded a prize for the best product. Auction component consists of the participants paying a fee for entering the tournament, which could be used to defray the cost of the prize or offset the cost of conducting the competition.

G. CONCLUSION

In this chapter we have discussed the motivations that affect the behavior of the Government and its contractors. We have learned that there are contractual and extra-contractual objectives for the contractor, which do not always include profit. We have also documented some innovative new approaches to incentive contracting. Each of these new approaches features unique applications and elements. We are now ready to apply some of these principles to some real-world situations.

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CHAPTER V. ANALYSIS OF AN AWARD FEE PLAN WITH SUGGESTED INCENTIVE ALTERNATIVES

The role of each member of the Acquisition Team is to exercise personal initiative and sound business judgment in providing the best value product or service to meet the customer's needs. In exercising initiative, Government members of the Acquisition Team may assume, if a specific strategy, practice, policy or procedure is in the best interests of the Government and is not addressed in the FAR, nor prohibited by law (statute or case law), Executive order or other regulation, that the strategy, practice, policy, or procedure is a permissible exercise of authority. [Ref. 18: part 1.102(d)]

A. INTRODUCTION

In this chapter, the researcher will discuss the current environment for the use of contractual incentives, summarize an award fee plan written by the Space and Naval Warfare Systems Center, San Diego (SSC) contracting office, and suggest innovative contracting incentives (with examples of their use in other programs) that would be appropriate for this program. The chapter is concluded with a discussion of the ways in which these incentive arrangements would benefit the SSC effort.

The incentive selection will be based upon the stated objectives of the award fee plan and the type of goods and services contracted for and the characteristics of the incentive arrangement. The researcher will also give examples of some of those contract incentives that are currently being used by other Governmental entities. While these examples are not exhaustive in nature, they illustrate the fact that new arrangements can and are being used by procurement officials.

B. USING INCENTIVES

In the researcher's opinion, the effective use of contract incentives leads to superior contractor performance, which is the objective of the Government in any program. The selection of the best contract incentive is challenging because of the many variables that are not always known to both parties, such as contractor needs and motivations, Government objectives and motivations, and problems that are not yet known to either party. Additionally, the researcher feels that the difficulty in selecting the most effective contract incentives lies not solely within the use of a CPAF type contract and the possibilities it represents, but in the selection of an appropriate and effective incentive in all Government procurement actions.

The incentive relationships that are currently available to the contracting officer, which is any arrangement not specifically prohibited by regulation, can be used without regard to contract type. Therefore, the contracting officer is free to negotiate an arrangement that is mutually beneficial and not completely dependent upon the contract type.

In order to select the appropriate incentive, the contracting officer must be aware of the incentive arrangements available and how other contracting officers have used them. To assist in this process, the researcher has made an effort to document the innovative incentive arrangements that are currently being used by various Governmental entities and that would add value to the SSC proposal.

As the guiding principles provided by the FAR states, any incentive can be chosen as long as it is not prohibited by regulation. Likewise, the FAR need not list the incentive arrangement for the contracting officer to use it. This leaves the selection of the incentive arrangement to the imagination of the contracting officer, who must exercise sound business judgment in doing so. This change in the FAR allows the contracting officer to use the incentive arrangements documented by the researcher.

The researcher does not feel that a contractual incentive must be widely used in order to be effective; many of the incentive arrangements documented are not widely used. Additionally, some of the most effective incentives are not currently being used while other, less effective incentives, continue to be used because they are well known by the contracting officer or program manager, and therefore, do not require the contracting officer to move out of his or her comfort zone. The researcher feels that procurement officials must move out of their comfort zone and innovate in order to improve the procurement process. The world of DoD procurement is changing rapidly; the incentives used by contracting officers should reflect that change, in the researcher's opinion.

The researcher feels that the selection of more effective incentives that are not in the contracting officer's comfort zone is an untapped resource of improved efficiency in programs and procurement actions that are badly needed by the Government. While the contracting officer may feel that using new and innovative approaches will be unduly difficult or time consuming, the researcher points out the examples used in this thesis to illustrate that they are not. Many of

the incentives documented in the study will actually save the contracting officer time and effort.

Traditional incentives are limited to the amount of the award (profit) only, ignoring extra contractual incentives, leaving incentives to be a limited tool for contractor motivation. The prudent contracting officer understands that profit is the primary motivator of a commercial enterprise, but also must understand that it is not the only motivator. The researcher believes that the contracting officer must be capable of understanding and implementing a wide spectrum of contractual and extra-contractual incentives that will motivate the contractor and stimulate competition.

The amount of the award is a quantitative measure of the contractor's performance in a specific criterion, while a qualitative measurement of performance could be more useful in some cases. A contractor may not need the financial benefit of a program, but could benefit from the technical experience. Likewise, a technically proficient contractor may simply be looking to maintain a steady flow of work at his facility rather than earning a large amount of profit. These issues are perpetuated by the fact that most contracting officers are aware of the usual method of making an award fee plan and administering it but are unaware of many of the other innovative agreements that are available to them. The challenge for the contracting officer is in discovering and applying innovative approaches that are tailored for a specific application and that will result in superior contractor performance.

As we shall see, some incentives are appropriate for a specific application while others could be effective motivators for use in any program. The incentives listed should not be considered an exhaustive review. The imagination is the only limitation in constructing contractual incentives. The purpose of this chapter is to provide the reader with alternatives to the traditional approaches to incentivizing contractor performance.

C. SUMMARY OF SSC AWARD FEE PLAN

The SSC award fee plan contained in the Request for Proposal (RFP) for contract #N66001-00-R-5001, which can be seen in Appendix (D), is a plan for evaluating contractor performance in providing engineering, fabrication, integration, and installation services to the U. S. Navy. The purpose of the plan is to "outline the organization, procedures, and evaluation periods for implementing the award fee provisions of the contract." [Ref. 29: p. 2]

The period of performance is estimated to be from January 2001 to December 2005, a period of four years. The length of the contract could be considered problematic when one considers the need for competition. The contractor is forced to compete for the contract only once every four years. This leaves the Government with the possibility of being stuck with a poorly performing, but not defaulting, contractor for at least four years. If the contractor feels that he can never improve to the performance level required to earn an award fee, he may resort to making unnecessary changes, reducing capitalization for the project, or other measures in order to squeeze as much

profit as possible from the contract. The researcher believes that the contract should be for one base year with options available for subsequent years, limiting the Government's exposure to the risk of a poorly performing contractor who is good at writing a proposal. This would cause the contractor to be concerned about performance continuously, rather than on a quadrennial basis.

The base fee is zero percent and the award fee that can be earned is 10 percent, which incentivizes the contractor to perform, but leaves him with no hope of earning more than a modest profit. As previously discussed, the base fee is added to the award fee for each award period. If the contractor's base fee is zero, that contractor must perform to a level that will earn some amount of award fee or he will earn no fee. Because some costs are unallowable, a base fee of zero will probably result in the loss of some money by the contractor, which is even more motivation to perform well. The researcher believes that this arrangement is good for the Government because of the ease of administering the contract, but may be cause for concern.

The contractor who is faced with an operating loss may resort to defaulting or failing to perform in some way as a strategy for reducing the loss, leaving the Government with the choice of reprocurement costs and the loss of significant amounts of time or the additional cost of incentivizing the contractor to perform to an acceptable level. Either way, the Government will pay for the poorly arranged incentive. Therefore, the researcher suggests a base fee that is higher than zero and is based upon the situation. With a larger potential for profit, the

Government has a better chance of negotiating for a fixed-price type contract that represents less risk for the Government.

The contractor is to be evaluated in six key performance areas: [Ref. 29: p.1]

1. Quality Products, Services and Deliverables
2. Schedule
3. Personnel Management
4. Ship Systems Integrated Installation (planning, engineering, execution)
5. Financial Management and Cost Control
6. Cost Savings

The award fee is determined by rating the contractor's performance in these areas in four levels, which range from outstanding to poor and have a percentage of the available 100% of award fee associated with them. Award fee administration follows the traditional approach for CPAF contracts with the following roles being filled: [Ref. 29: p. 2]

1. Fee Determining Official (FDO): The individual determines the amount of award fee earned.

2. Performance Evaluation Board (PEB): The group that reviews the contractor's performance and recommends an award fee amount to the FDO. The individuals will be designated after contract award. Two, non-voting members will assist the PEB: the Contracting Officer's Representative (COR) and the Contract Administrator.

3. Contracting Officer's Representative (COR): The COR, a Government employee, is a technically qualified, properly trained individual, designated in writing by the Procuring Contracting Officer to assist in the technical monitoring or administration of a contract and/or orders under a contract and administration of the Award Fee Plan.

4. Technical Representative (TR): The TR is the originator of the task and responsible for submitting input on each of his/her task orders to the COR for consideration in the evaluation process. The COR will coordinate the collection and forwarding of the information to the PEB Chairperson. To maintain the integrity of the award fee process, TRs shall not be members of the PEB.

5. Procuring Contracting Officer (PCO). The PCO is responsible for initiating a contract modification so that the contractor may bill for fee.

6. Contract Administrator (CA). The contract specialist assigned to administer the contract is responsible for assisting the COR with: 1) receipt, processing and distribution of evaluation reports from all required sources; 2) scheduling and assisting with internal evaluation milestones, such as briefings; and 3) accomplishing other actions required to ensure smooth administration of the Award Fee Plan.

7. Defense Contract Audit Agency (DCAA). DCAA is a separate agency of the Department of Defense that is under the direction, authority, and control of the Assistant Secretary of Defense (Comptroller). DCAA's purpose is to provide accounting and financial advisory services, in connection with the negotiation,

administration, and settlement of contracts and subcontracts, to all DOD procurement and contract administration activities.

The objective of the award fee plan is to afford the contractor an opportunity to earn an award fee that is commensurate with superior performance. The Government's objective in the arrangement, similarly, is superior performance in the stated areas. In addition to providing special management emphasis to the evaluation criteria set forth in the plan, the contractor is responsible for striving to attain the highest standards of excellence in the performance of this contract.

The incentive for the superior performance that the Government seeks is additional profit, through the application of the award fee. Because the base fee is zero, the contractor will earn no profit unless the FDO determines that it has been earned. This could be considered a negative incentive; if the contractor fails to perform, there will be no profit, which could be considered a loss of opportunity.

The award fee is an amount that may be earned by the contractor in whole or in part based upon an evaluation by the FDO of the contractor's performance. Fee associated with poor performance on a specific task order will be removed from the award fee pool. All evaluated, unearned fees will be removed from the award fee pool at the conclusion of every award fee evaluation period. This means that the contractor must earn the entire award fee during that period of performance. Unearned award fee cannot be earned during subsequent periods, no matter how the contractor's performance improves.

This feature may also be considered as a negative incentive; the contractor has only one bite at the apple, or chance for the award. If the contractor feels that it cannot possibly improve, it may shift resources to other programs to the detriment of this one because it feels that there is no hope of improving the total profit for the project to an acceptable level.

The FDO may unilaterally change any matter covered in the plan, provided the contractor receives notice of the change at least thirty (30) calendar days prior to the beginning of the evaluation period to which the changes apply. The changes may be made without modification to the contract. Changes might occur due to a change in management emphasis, recognition of a necessity to motivate higher performance levels in a specific area, or to improve the award fee determination process.

The PEB will submit changes applicable to the next evaluation period for approval to the FDO with appropriate comments and justification. This feature of the plan gives the Government a chance to shift the contractor's focus to an area that it feels is more important. The contractor may feel that the grading process is arbitrary and that the rules change to suit the Government. Therefore, the Government must make changes as judiciously as possible.

The award fee plan, as stated previously, is geared toward the award of profit as the only motivator, despite the fact that many other forms of motivation (extra-contractual incentives) have been established as being effective. This is the major weakness of the SSC plan in the researcher's opinion. There are a number of other arrangements that would assist both the Government and the

contractor in discovering and reaching their common goals, such as Award Term, Performance Based Incentives, and Performance Based Payments.

In the researcher's opinion, the greatest strength of the plan is its inherent simplicity; the base fee is zero and there is no rollover provision for the award periods. The author of the award fee plan has mitigated much of the administrative burden in the plan through its simplicity; this burden is usually an integral part of a CPAF contract. The contracting officer will have no difficulty in computing the amount of award fee earned during any period. It will be the base fee, which is zero, added to the award fee determined by the FDO. There will be no additions from period to period. [Ref. 29: pp. 1-10]

D. ALTERNATIVE INCENTIVES AND THEIR APPLICATION

In this section, the researcher suggests other incentive arrangements that have been chosen based upon the needs of the Government, the type of contract being used, the services being provided, and the research, which has uncovered some effective incentive arrangements that were not employed by SSC in the cited arrangement. While these arrangements have been chosen because the researcher believes they are appropriate for the SSC contract, they also may be appropriate, either in whole or in part, for many other types of contracts and situations. The arrangements are currently used by some Governmental entities that could be contacted for information concerning their effectiveness through time.

1. Cost Reimbursement Provisional Fee

NASA's Space Station contract is a cost reimbursement provisional fee arrangement that provides that the contractor will be docked 25 cents for every dollar of cost overrun, but will earn an additional 25 cents for every dollar saved. In addition, all award fee payments are provisional. If station hardware fails to perform, the fee paid is subject to retroactive reduction.

Provisional award fee can be earned at various specified milestones through each of three phases: space station assembly, space station operations, and space station sciences. These in-space milestones measure the effectiveness and efficiency of the on-orbit performance. Award fee can be earned in all phases simultaneously although emphasis will change in a logical sequence through completion of each phase depending on where in each phase the effort is being performed. [Ref. 30: p. 48]

2. Award Term

Like other incentive concepts, Award Term focuses on incentivizing contractors to accomplish superior performance in areas that the Government considers to be important with some positive reinforcement. Similar to an award-fee contract, it provides an incentive award after the evaluation of selected award factors. However, compensation is in the form of an additional period(s) of performance, for the potential to earn additionally award as well as continued business, rather than in direct award fee. An example of this type of incentive being used currently can be found at the Air Force: Propulsion Business Area/Public-Private Competition (Engine Repair and Maintenance).

The effort, a public/private competition, is planned as a requirements contract with an initial ordering period of seven years. The initial seven-year ordering period may be extended or reduced, on the basis of contractor performance, resulting in an ordering period lasting a minimum of five years from completion of the transition period to a maximum of fifteen years from the date of contract award. The RFP contains an Award Term Clause, which will allow the successful offeror to earn extensions to the initial ordering period based on performance as described in an Award Term Plan.

The successful contractor's performance will be continually monitored against "measures of merit," outlined in the contract. Performance is reported to an Award Term Review Board (ATRB) who recommends award term points to a Term Determining Official (TDO). Accumulation of points over the basic period of performance determines the ultimate length of performance periods. Points awarded can be positive (add time) or negative (subtract time).

According to the Procuring Contracting Officer (PCO) at Kelly AFB, this concept has great support from the contractors submitting offers. Success is measured in additional performance opportunities and the development of a long-term relationship with the customer. Offerors stated that there is more pressure on them to provide exceptional performance in an award term than in an award-fee situation, because failure to earn maximum points directly affects the period of performance and return on investment.

This technique for establishing an earned long-term relationship can be useful in competitive acquisitions in which the Government would otherwise have to re-compete more frequently, even if the incumbent is performing well. While the Air Force has awarded several such contracts, and others are in the source selection phase, none have been in effect long enough for the effectiveness and any potential problems associated with them to be evaluated. [Ref. 30: p. 54]

3. Performance Based Incentives

Incentives should be used when they will induce better quality performance and, as previously mentioned, may be positive, negative, or a combination of both. They should be applied appropriately to motivate contractor efforts that might not otherwise be emphasized, and to discourage inefficiency. Incentives should apply to the most important aspects of the work, rather than each individual task.

Where negative incentives are used, the incentive selected should represent as closely as possible the value of the service lost. This amount can be computed by determining the percentage of contract costs associated with each task. For example, if a given task represents 10 percent of the contract costs, then 10 percent will be the potential maximum deduction in case of task failure. Similarly, if a task is not performed according to the requirements stated in the contract, deductions can be computed based upon tables or formulas designed to reflect the value of substandard output.

Effective performance-based contracts: [From Ref. 31: p. 155]

- Define work in measurable, mission related/terms;

- Contain performance standards;
- Include quality assurance plans for measuring performance; and
- Provide financial incentives and penalties based on performance.

Performance incentives should be challenging yet reasonably attainable.

The goal is to reward contractors for outstanding work but not penalize them for work that is fully satisfactory but less than outstanding.

The definitions of standard performance, maximum positive and negative performance incentives, and the units of measurement should be established in the solicitation. They will vary from contract to contract and are subject to discussion during a source selection. Care must be taken to ensure that the incentive structure reflects both the value to the Government of the various performance levels and a meaningful incentive to the contractor.

Incentives should correlate with results. Agencies should avoid rewarding contractors for simply meeting minimum standards of contract performance and should, instead, create a proper balance between cost, performance, and schedule incentives. The incentive amount should correspond to the difficulty of the task required but should not exceed the value of the benefits the Government receives. Agencies need to follow-up to ensure that desired results are realized (i.e. that incentives actually encourage good performance and discourage unsatisfactory performance). Verifying the effectiveness of the incentives used is important.

Past performance "report cards" per FAR 42.15 should reflect adherence to performance requirements when a Performance Work Statement (PWS) has

been used. Performance under performance based service contracts (PBSC) provides better data for evaluation of past performance under other-solicitations. A powerful incentive for excellence and customer satisfaction is created when contractors know their performance will influence future award decisions. [Ref. 31: p. 157]

The Department of Energy (DOE) is more dependent on good contractor performance than any other agency – 90 percent of its \$15 billion budget is applied to contracts, with the majority of the dollars going to the research laboratories. [Ref. 32: p. 9]

Without proper management, training, and focus, contracting can be a problem. In 1995, DOE's performance based incentive (PBI) program contained \$14.2 million in fees covering 34 incentives with 86 objectives. Contractors were paid incentives for work done before the fees were instituted and for work that was never completed. [Ref. 32: p. 9]

In 1996, the DOE Inspector General criticized the use of performance incentives at waste sites and labs. Incentives were identified as lenient, monetary payments were made for less than satisfactory results. Fees were paid for work performed before fees were established. Performance targets were vague and not results oriented. [Ref. 32: p.9]

In 1997, after a year of focused attention on improvement, incentives became specific and thresholds for acceptable performance were raised. Development of the incentives included participation of not only site management, but also staff. Performance measurement was transformed to a

management process and taken out of the bureaucracy. The focus on defining what needs to be done, not how, freed contractors to exercise ingenuity and creativity to meet requirements and encouraged contractors to come up with cheaper and better ways of accomplishing work. [Ref. 33: p. 25]

The State of Virginia recently awarded contracts for reconstruction and improvement of critical interchanges in the DC Metro area. This \$350 million project includes building or reconfiguring more than 40 bridges and ramps and 21 traffic lanes. The effort must be completed on time and within budget. Not only are funds limited, but also any delay in completion or major divergence from the schedule could wreak havoc on commuting in the area. This would have a direct impact on the cost of doing business within and around the DC Metro area since the interchanges are essential traffic points on the North-South interstate transit routes. Finishing early results in cost savings to the commuter, consumer, and taxpayer. So critical are these savings, in fact, that the following incentives are included: [Ref. 34]

- \$10M bonus for early completion (9 months early) of first two phases (value of phases is \$120M). \$5M bonus if finished 6 months early.
- Negative incentive of \$30,000/day if work is late.

In 1994, an earthquake caused considerable damage to the highway infrastructure in and around the Los Angeles area. The damage blocked the most heavily traveled road in the United States, the Santa Monica freeway, closed a major north-south interchange north of the city, as well as other bridge and road damage. It was extremely critical to reopen the roads and rebuild the

bridges. To accomplish this, the State of California designed an extremely aggressive incentive structure on a fixed-price contract to ensure earliest completion of the repairs and reconstruction. [Ref. 35]

This incentive structure included an early completion incentive of \$200,000 per day if it was completed ahead of schedule. The contractor completed the work in 66 days, 74 days early. He was paid a \$14.8M incentive in addition to the \$14.9M project price. According the State of California, this resulted in savings from the avoidance of lost productivity of \$1M per day. [Ref. 35]

Conversion to performance based incentives for Navy aircraft maintenance resulted in an immediate savings of \$25 million. Additional savings are anticipated through the positive and negative incentives contained in the contract. The proposal evaluation and award process took 30 days less than was needed for the previous non-performance based competition. Working with industry as a team resulted in savings in time and money. Currently, performance is surpassing the contract's minimum required standards. [Ref. 36]

4. Performance Based Payments (PBP)

Performance Based Payments are an effective means of providing contract financing, with reduced burden to both the Government and industry. PBPs can be provided "...only to the extent actually needed for prompt and efficient performance, considering the availability of private financing." (Ref 18: 32.104(a)) The use of PBPs can be viewed as an incentive to contractors who might otherwise not be able to compete or have the opportunity to successfully

perform because of a variety of legitimate financial reasons. PBPs cannot exceed 90% of the price prior to the delivery payment. [Ref. 37: p. 2]

The approval of commercial performance based payments, in association with a FAR Part 12 commercial acquisition, provides additional incentive for industry to enter the Government marketplace. [Ref. 37: p. 3] In the researcher's opinion, the commercial marketplace represents a large number of potential providers of goods and services that have not previously participated in sales to the Government.

Acquisition reform has brought significant changes to FAR Part 32, Contract Financing. There is now a distinction between commercial and non-commercial financing. In fact, a new FAR Subpart 32.2, Commercial Item Financing, allows for the use of commercial financing arrangements that have been determined to be appropriate or customary to a particular market segment. No longer is the Government limited solely to the use of delivery payments, which are made after an item is tendered for delivery and accepted. Financing payments such as advance and interim payments can now be used on contracts for the purchase of commercial items.

In the researcher's opinion, the new policy represents a significant change from the previous market survey requirements in terms of the goals or outcomes of the activity. While both require the identification of qualified or capable sources in order to foster competition, the new policy emphasizes the use of market research in order to promote the use of commercial items as the first

choice in meeting Government requirements, and non-developmental items (NDI) as the second choice.

This emphasis on commercial and NDI products applies at both the system and component levels. Another significant departure from the old market survey policy is the requirement to determine standard business practices of the commercial marketplace. This relates directly to the FAR Part 12 contract clause requirement that specifies that clauses must be consistent with standard commercial practices for the acquisition of the item as identified in market research. [Ref. 37: p. 8]

5. Share-In-Savings (SIS) Contracting

The share-in-savings contract is a version of fixed-price, performance-based contract now being used to shift cost and performance risks from the Government to contractors. [Ref. 38: p. 78] To persuade contractors to take the risks involved in devising and building solutions without fee guarantees, Government agencies are building partnerships with their contractors. The qualified bidders get unprecedented access to organization programs and people, as well as a role in managing the project. SIS is endorsed in the Clinger-Cohen Act of 1996, PL 104-106 (FARA). This increased access is intended to allow the contractor to better understand and deal with the requirements of the Government. [Ref. 38: p. 79]

As mentioned earlier, performance contracts carefully describe work in terms of the results an agency seeks, set performance standards based on those results and measure contractor performance against those standards. The idea

is to let contractors apply ingenuity and innovation to get the work done quickly and well, instead of dictating to them the Government's preferred approach. Fixing the prices of these contracts places the emphasis for results in schedule and program costs on contractors if they expect to increase profits. Often, agencies add performance incentives to further emphasize the importance of performance targets for critical elements of service.

There are three types of SIS situations: [Ref. 32: p. 15]

- Revenue enhancement: an agency seeks to enhance revenue by collection of taxes or user fees.
- Cost avoidance: an agency wants to reduce a net expenditure by cutting the cost of an operation. The Government shares automatically in any savings.
- Agency reward: an agency wants to reduce a net expenditure and wants to keep the savings for its own use.

A variant of the share-in-savings contract can guarantee offerors nothing, instead promising payment only when benefits result from the contractor's work on the contract. The offeror, not the Government, assumes the upfront project costs so the Government doesn't pay for solutions that fail. This approach represents a major shift in the distribution of risk. As stated previously, the Government normally assumes all risk in the cost-reimbursement type contract.

Share-in-savings contracts bring unique challenges for Government agencies. To persuade contractors to take the huge risks involved in devising and building solutions without any fee/profit guarantees, agencies must approach

the business relationship as a partnership. Government contracting and program people define the problem to be solved rather than the work to be done and solicit conceptual proposals from potential business partners.

The Energy Department is using the share-in-savings approach to help Federal agencies reduce their energy consumption, as required by the 1992 Energy Policy Act and an executive order requiring a 30-percent reduction in energy consumption in Federal buildings between 1985 and 2005. The Federal Government is the nation's largest energy consumer using \$4 billion worth of energy to heat, light and operate its 500,000 buildings each year. [Ref. 33: p. 25]

To achieve the 30-percent reduction by 2005 would require energy savings worth \$1 billion a year, requiring an estimated investment of \$5 billion in energy savings equipment. To overcome this initial financial investment, Energy's Federal Energy Management Program (FEMP) has crafted energy savings performance contracts.

Under these contracts, energy service companies pick up all the upfront costs of identifying a facility's energy needs and then buying, installing, operating and maintaining energy-efficient equipment to cut energy costs. During the contract, the firm owns the equipment. When the contract ends, the Government owns it. In payment, the companies get a share of energy savings generated by the improvements during the contracts, which can last as long as 25 years. [Ref. 33: p. 27]

FEMP negotiated a series of contracts valued at \$5 billion and modeled on multiple-award, indefinite delivery/indefinite quantity contracts with firms in six

regions across the country. Under these contracts, agencies use delivery orders to contract with firms that already have competed and won slots on a regional "Super ESPC roster." [Ref. 39] An agency can select a single company or request proposals from more than one, without advertising the procurement. FEMP awarded the first Super ESPC, covering the Western Region of the United States, in May 1997 to five firms. A second Super ESPC, covering the Southeast, was awarded in January 1998. [Ref. 39]

SIS is directly applicable to Logistics Modernization. The Services have logistics systems several generations behind in Information Technology state of the art. For example, the Army does not yet have total asset visibility in its decentralized parts system, to the level it believes is required to support the "right part, right time, right place" concept. By updating technology, the Army could quickly locate and deliver spare parts while stockpiling fewer parts. System benefits would include fewer purchases of spare parts and save the Army \$4B over 10 years.

With SIS, the winning contractor would be paid in the form of a negotiated percentage of the savings that the military would realize from making fewer purchases of spare parts. This focuses the Government and vendors on the Government goal of generating results for agency missions and taxpayers.

Better performing contractors, those that have high hourly rates, are frustrated by the need to compete against manpower-intensive contractors for level-of-effort work in which the contractor can get paid even if it performs poorly. SIS allows quality contractors to compete more successfully, because the

contractor gets paid based on benefits achieved rather than costs incurred. To be successful, SIS procurements must be able to value the benefits that a contract is supposed to achieve. [Ref. 40: p. 27]

E. APPLICATION OF INCENTIVES TO SSC

The Cost Reimbursement Provisional Fee method of incentivizing the contractor would assist SSC in its goal of cost savings by motivating the contractor to spend less, which results in it earning more award fee and the Government saving in a portion of the reduction in cost. The researcher feels that this is an arrangement that would be propitious in any cost-reimbursement type contract because, in this type of contract, the Government has accepted the risk for costs, leaving the contractor with no incentive to save money.

The Government has assumed the risk for costs incurred by the contractor in the cost-reimbursement contract, but should not leave cost control to the contractor only. Giving the contractor a share in the savings is a powerful motivator in its cost control efforts, which may result in lower costs, an objective of the Government in any arrangement. These savings can occur in many ways, but the contractor will not aggressively seek them if there is no return on the investment of effort. A Cost Reimbursement Provisional Fee provides that return on investment, or motivation to aggressively seek savings. As stated in the NASA case, milestones must be selected appropriately in order to be effective.

The Government can implement the Award Term method of contracting by setting the initial period of performance of the contract at four years. By setting

the initial period of performance of the contract at four years, SSC has given away much of the potential for using award term contracting, but could still use it as an incentive in the arrangement by offering additional period(s) of performance at the conclusion of the effort. Many of the activities that the SSC contract calls for require significant capital investment, which is a key factor in a contractor's decision to compete. If the contractor knows that the period of performance warrants the investment necessary to perform, he or she will make the investment.

Award Term contracting is an attractive incentive because SSC's effort is long-term, which provides the security contractors need to make capital investments. Forcing a contractor to earn the contract for subsequent periods of time through superior performance would be an effective motivator in the researcher's opinion. Contractors, as stated previously, see this as an opportunity to make the investments that will allow them to operate for long periods of time, increasing their return on investment assets used in the performance of the contract.

The examples of performance-based incentives clearly illustrate the power that carefully chosen and meaningful performance based incentives, either positive or negative can have on the contractor and the Government. The researcher believes that using a performance based incentive in the SSC plan has already been addressed in several of the key performance criteria (Quality Products, Services, and Deliverables, Ship Systems Integrated Installation, and Personnel Management). The contractor must perform in those areas in order to

earn award fee and cannot make up for lost award between periods. The award plan does not call for negative incentives though, the contractor will not lose any money through poor performance, he will only miss out on potential profit.

The SSC contract calls for engineering, fabrication, integration, and installation services -- extremely technical and important areas of work. The use of performance based incentives that clearly define what the Government wants would motivate the contractor to provide superior technical performance. Performance based incentives are geared toward motivating the contractor once it is chosen. Some incentives allow the Government to expand the pool of available competitors before one is selected, ensuring more efficient performance.

The researcher believes that PBP can be used in any arrangement effectively. This is because the need for payment (cash flow) is critical to many organizations. When dealing with the Government, many contractors accept the fact that it takes time to get paid as a cost of doing business with the Government. Under PBP, the onus for meeting the criteria for payment is on the contractor. It must meet the stated goal in order to be eligible for payment. The researcher believes that PBP is one of the basic steps towards establishing a normal business relationship with suppliers, rather than the traditional Government-contractor relationship, which bears no resemblance to normalcy. Another innovation that will facilitate this shift in relationship is an alternative to CPAF contracts that includes enough incentive for contractors to accept the risk that the Government accepts in CPAF contracts.

SIS contracting is provided as an innovative new approach that is a logical alternative to the CPAF contract type in all but the riskiest programs. The use of SIS can be very effective, as illustrated by the cases, and should be considered by SSC.

F. CONCLUSION

The use of appropriate and innovative contractual incentives to motivate the contractor to achieve superior performance is beginning a period of renaissance. Numerous Government entities have embraced the use of innovative incentive arrangements in the effort to get goods and services that are better, faster and cheaper. The contracting officer must constantly update his or her knowledge concerning these innovative approaches and determine which is most effective for his or her program based upon numerous variables.

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VI. CONCLUSIONS AND RECOMMENDATIONS

...In Award Fee Contracting, the Government assigns priority to what kinds of things it considers important and will pay an award fee for. These types of contracts have been in use since 1962, when NASA began to use them. Their purpose is to encourage the contractor to surpass the minimum acceptable level of performance. Award fee contracts have generally been found to be effective in improving contractor performance.... [Ref. 41: p. 255]

A. CONCLUSIONS

Incentives, while having been in use by the Government as early as 1909, have most recently evolved from the incentive type contracts used by the Navy in the 1940's and have become more sophisticated with time. NASA pioneered the use of the CPAF type contract and subsequently made incremental improvements to its application. The use of incentivized arrangements expanded during this period because they worked in reducing costs and improving contractor performance. NASA found the CPAF contract type to be especially effective in the intensive Research and Development efforts of the 1960's. The CPAF contract type has been widely used in the supply of installation services because of the need for superior performance and the ability to provide interim performance evaluations to the contractor.

The evolution of the regulatory framework that Government procurement officials have worked under was established in the 1940's and has recently concluded with the acquisition reform of the 1990's. Recent reforms in procurement regulations have allowed the contracting officer to innovate when it provides best value for the Government. This change in regulation has changed

the contracting officer's role to one of business manager from enforcer of procurement regulation. The researcher believes that the future for innovation in contractual incentives is certain due to the continued need for acquisition reform and improved performance.

The elements of the CPAF contract include the estimated cost, base fee, and award fees. The research documents the purpose of the award periods and evaluation criteria. It is noted that award fee evaluation criteria and the composition of the award periods must be meaningful in their make up and communication in order to effectively motivate the contractor. The contracting officer must analyze the incentive arrangement for effectiveness by analyzing all of the strengths, weaknesses, and objectives of the stakeholders involved in the procurement. The contracting officer must use incentive arrangements that are effective in incentivizing the contractor in ways that will ensure superior performance in areas important to the Government. Additionally, the contractor must fully understand the application of the award criteria and communicate with the FDO in order for the process to be effective.

There are contractual and extra-contractual objectives for the contractor, which do not always include profit. The contracting officer must understand this principle and learn to analyze the contractor's need for extra-contractual objectives. Once the contracting officer gains an understanding of all of the objectives of the contractor, he or she is ready to select an appropriate incentive arrangement from the many that are available for use. Therefore, the research documents some innovative new approaches to incentive contracting, providing a

quick list of possibilities for incentivizing the contractor. Each of these new approaches features unique applications and elements. To be effective, the incentive arrangement must be chosen for the specific application. In the researcher's opinion, this is the most difficult task for the contracting officer.

SSC has issued a solicitation for installation services with simplicity of administration in mind and the use of profit, or award fee, as the only motivator. The Award Fee Plan calls for a base fee of zero and no carry over between award periods. The award is based on a subjective evaluation of the contractor's performance in six key areas. Those areas are generic in nature however, and could be used in any effort. The researcher feels that SSC could enjoy considerable improvement in performance, schedule, and cost through the use of some additional innovative approaches. These approaches are selected based upon the objectives of the Government and the type of services provided. The research effort documents these suggested incentive arrangements and illustrates their use through actual cases of their use.

B. RECOMMENDATIONS

Incorporating new approaches to contractual incentives into contracting officer training and education programs is necessary. The contracting officer cannot implement new approaches to incentives without first learning what they are, how they work, and in what type of program they are most effective. Training and education that includes the analysis of Government and contractor objectives, strengths, weaknesses, and capabilities will allow the contracting

officer to select the most appropriate arrangement. These approaches should be based upon sound business practices rather than regulatory requirements.

Documenting savings or losses realized when using innovative approaches will determine both their successes and their failures. The contracting officer must understand that innovative approaches will help save the Government time and money while resulting in a quality product or service. This understanding must be gained through the documentation of procurement success stories that owe their success to the use of innovative success. Likewise, the failure of incentives must be documented, to prevent the Government from making the same mistake twice. The researcher believes that no incentive arrangement can be considered totally effective or totally ineffective, but that the challenge lies in selecting the most effective arrangement for any given situation.

Continue to allow contractors to make and suggest arrangements that are mutually beneficial. The FAR guiding principles authorize the use of any arrangement not specifically prohibited; this ability is key to the contracting officer's ability to innovate. The Government need not initiate every innovation in contractual incentives; the contracting officers in the field are better able to determine the needs of stakeholders and select an appropriate incentive arrangement. Likewise, if the contractor has a need or capability that makes a particular arrangement especially capable, the Government should analyze that possibility. If the arrangement serves the needs of the Government and the contractor, both parties would benefit.

C. ANSWERS TO RESEARCH QUESTIONS

1. What is the background of contractual incentives?

The background of contractual incentives is documented in Chapter II. The Navy began using Fixed-Price-Incentive type contracts for constructing ships in the early 1940's. Professor Scherer pioneered the use of evaluating contractor performance after the fact, which resulted in the CPAF type contract.

2. What is the conceptual framework and history of contract incentives used by the Government in CPAF contracts?

Chapter II documents the historical background the conceptual framework of the CPAF contract beginning with the use of incentives. The CPAF contract is a cost-reimbursable contract with a provision for fee. The CPAF contract is unique in the way that fee is awarded. The award fee consists of two parts, the base fee and the award fee. The contract contains a maximum fee that is the combination of the base and award fees. The award fee incentivizes the contractor to perform in a key area. The fee is awarded subjectively based upon evaluation criteria stated in the contract. These criteria can be stated in terms of qualities that are important for the program. The Government in a unilateral decision determines the award fee.

In 1967, the ASPR Committee approved the CPAF contract, based on NASA Marshall Spaceflight Center experiments with contract types, and a Navy test program. The primary objective of the CPAF contract was to promote improved performance by rewarding performance that exceeded a certain minimum standard.

Chapter II documents regulations and other impediments to innovation that existed prior to the 1990s. These incentives, while having been in use as early as 1909, evolved from the incentive type contracts used in the 1940s. The chapter discusses the evolution of the regulatory framework that Government procurement officials have worked under starting in the 1940s and ending in the 1990s with acquisition reform.

In the 1990s, reform initiatives changed the dynamics of the incentive possibilities available to the contracting officer. Two recent laws have been significant in reforming acquisition. The Federal Acquisition Streamlining Act (FASA) and the Federal Acquisition Reform Act (FARA) have allowed contracting officers to innovate. The rewrite of the Federal Acquisition Regulation (FAR) Part 15 (dealing with how the Government chooses suppliers), FAR Part 12 (Acquisition of Commercial Items), and FAR Part 13 (Simplified Acquisition Procedures) have dramatically decreased the rigidity and complexity that once marked the process. These changes have made incentives in CPAF and other contract types open-ended. Contracting officers may choose the arrangement that works best for the given situation.

3. How is the CPAF contract designed/administered and what are the advantages and disadvantages of using it?

Chapter III discusses the basic elements of the CPAF contract to include the estimated cost, base fee, and maximum fees. The chapter identifies the purpose of the award periods and evaluation criteria. The researcher believes that the evaluation criteria must be meaningful in their make up and

communication in order to effectively motivate the contractor. The contracting officer must clearly convey the award criteria and the award structure to the contractor. Additionally, the criteria and structure must be tailored to the effort under contract.

When properly administered, the CPAF contract can be a powerful motivator to contractor performance. Conversely, the contract type can be somewhat burdensome administratively. Because of the administrative burden, the CPAF contract is used for large-scale efforts where another contract type is not suitable.

4. How are profit and other incentives used in CPAF contracts and what new incentives can be used to motivate the contractor to perform in areas most important to the Government?

Developing effective performance incentives is a continual process that adapts to changes in the life cycle of the program and the contractor's performance. Successful incentives also depend upon understanding the type of work, the phase of the work, the goals of the Government and the contractor organizations, and the respective stakeholders who enter into an agreement.

Achievement of the final result, be it a product or service, involves tradeoffs. Achieving the right balance among the tradeoffs depends on effectively translating the program's goals into an effective contract strategy. Success depends on understanding differing motivations and developing balance in the incentive relationship between the contractor and the Government.

The contractual incentives documented in Chapter IV documents some of the innovative approaches available to the contracting officer. The researcher includes some of the characteristics of the incentive arrangements to assist in selecting them for use.

5. What are the advantages and disadvantages of CPAF contracts and how could CPAF contracts be improved?

CPAF contracts can motivate the contractor to achieve superior performance. The Government judgmentally determines and measures a contractor's performance within specifically designated performance categories, evaluation criteria, and evaluation periods.

Advantages:

- The contracting plan can be revised by the Government when necessary to adapt to program changes.
- The contracting plan can be adapted by the Government to flow down as individual worker bonuses, making the incentive real and personal.
- Contractual incentives can be based on simple, reasonable, achievable, and measurable performance of the objectives important in the effort.
- The Government can design the award fee plan so that all profit/fee can be based on performance if it is in the best interests of the program.

Disadvantages:

- To be successful, the contracting officer must carefully review of the Statement of Work. The Government will receive the effort described in the Statement of Work.
- The CPAF type contract requires administrative time investment, especially in the establishment of the tasks necessary to effectively determine the award fee. The quality of work in the administration of the contract is key to incentivizing the contractor. If he feels that he can get away with minimum effort, he will do so. If superior performance is not recognized, it will probably not happen again.
- The CPAF contract type requires a carefully documented record of performance and consistent records in order to make the award process meaningful.
- The evaluation criteria require balance between cost, schedule and task performance so that one area is not emphasized over another. The contracting officer and the FDO must be careful in this area so that the objectives important to the Government receive the appropriate attention from the contractor.

The researcher believes that CPAF and other contract types can be improved through the use of innovative approaches to incentivizing contractors. The research documents some of the possibilities of innovative approaches and some cases of their current use. The researcher also makes recommendations

for an Award Fee Plan at SPAWAR based upon the stated objectives and the type of services offered.

6. What are the conclusions and recommendations of this research?

The conclusions and recommendations of the research are documented at the beginning of Chapter VI.

D. AREAS FOR FURTHER RESEARCH:

- The further documentation of innovative incentive arrangements as they are developed and used by contracting officers concentrating on incentives appropriate to fixed price-type contracts.
- A detailed cost-benefit analysis of the innovative incentive arrangements that is based on the cases listed in the thesis featuring a contrast and comparison with the cost of each effort using traditional approaches.
- An economic analysis of the savings attributable to the cases of incentive innovations listed or any other situation where the innovations in contracting incentives is used.
- An analysis of the changes in procurement regulation and the new opportunities concerning incentive arrangements that is open to contracting officers.
- The development of a proposed change in acquisition regulation and the impact it would have on incentive contracting.

- The development of a proposal to change the education and training that contracting officers receive to include the application of non-traditional incentive arrangements.
- The development of a model for selecting an appropriate incentive based upon the factors present in a give procurement scenario.

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APPENDIX A

CPAF Contractor Evaluation Criteria

I. Performance of Work

- (i) Timeliness
- (ii) Quality
- (iii) Manpower
- (iv) Materials Utilization

II. Technical Management

(1) Management Structure

- (i) Correlation of contractor's organization to that of laboratory
- (ii) Lines of communication between Government and contractor
- (iii) Local autonomy and authority
- (iv) Support by corporate headquarters

(2) Management performance

- (i) Initiative
- (ii) Organizing for individual jobs
- (iii) Planning and estimating
- (iv) Supervising
- (v) Coordinating
- (vi) Establishing and maintaining controls (fiscal, manpower, materials, fabrication, schedule, etc)
- (vii) Following up
- (viii) Reporting
- (ix) Understanding Government requirements
- (x) Cost reductions, improvements, economies, and eliminating unessential work

(3) Staffing

- (i) Adherence (quantitative) to overall staffing plan
- (ii) Qualifications of individuals for jobs (including controls to avoid misassignment of individuals)
- (iii) Employee turnover

(4) Subcontracting

- (i) Supervision of subcontractors
- (ii) Inspection of subcontractor's products or services
- (iii) Coordination of subcontractors
- (iv) Lines of communication

III. Business Management

- (1) Overall Business Management
 - (i) Effectiveness of contractor's business management
 - (ii) Overall management initiative
- (2) Purchasing and Subcontracting System
 - (i) Management support of purchasing policies and procedures
 - (ii) Effectiveness of such policies and procedures
 - (iii) Effectiveness of subcontract business controls
 - (iv) Subcontract administration
 - (v) Award fee administration
- (3) Cost Control
 - (i) Labor cost
 - (ii) Overhead cost
 - (iii) General and administrative expense
 - (iv) Other direct charges
 - (v) Subcontract costs
 - (vi) Cost estimating policies, procedures, and practices
 - (vii) Adequacy of accounting procedures
 - (viii) Cost reduction
- (4) Property Administration
 - (i) Management support of property control procedures
 - (ii) Adherence to property control procedures
 - (iii) Proper accountability for the classification of property
 - (iv) Care of GFP
- (5) Labor Relations
 - (i) Effectiveness of labor relations policy
 - (ii) Administration of labor relations function
 - (iii) Timely notice of potential or actual labor disputes
- (6) Reports and Procedures
 - (i) Policies and procedures (including revisions)
 - (ii) Progress reports
 - (iii) Funds reports
 - (iv) Overtime reports
 - (v) Other
 - (a) Timeliness
 - (b) Accuracy
 - (c) Necessity for resubmissions

- (7) Personnel Administration
 - (i) Wage and salary administration including timeliness of submission of revisions to wage and salary structure
 - (ii) Compliance with personnel policies and procedures
- (8) Contract Compliance
 - (i) Compliance with contract business requirements
 - (ii) Comprehension of contract business requirements at all management levels
- (9) Small Business Program
 - (i) Effectiveness of policies
 - (ii) Effectiveness of procedures
- (10) Equal Employment Opportunity (Non-discrimination)
 - (i) Company's written policy
 - (ii) Program for implementation
 - (iii) Reporting

IV. Utilization of Facilities and Equipment

- (i) Maintenance program
- (ii) Breakage, damage, and loss
- (iii) Efficiency of equipment/facilities utilization
- (iv) Safety program

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APPENDIX B

| Adjective Rating Range | Numerical Rating (60 to 100) | Adjective Rating | % of Potential Award Fee |
|------------------------|------------------------------|--------------------|--------------------------|
| | 100 | Superior | 100 |
| | 99 | | 97.5 |
| Superior | 98 | | 95 |
| | 97 | Superior minus | 92.5 |
| ----- | 96 | | 90 |
| | 95 | | 87.5 |
| | 94 | Excellent plus | 85 |
| | 93 | | 82.5 |
| | 92 | | 80 |
| | 91 | | 77.5 |
| Excellent | 90 | Excellent | 75 |
| | 89 | | 72.5 |
| | 88 | | 70 |
| | 87 | Excellent minus | 67.5 |
| ----- | 86 | | 65 |
| | 85 | | 62.5 |
| | 84 | Good plus | 60 |
| | 83 | | 57.5 |
| | 82 | | 55 |
| | 81 | | 52.5 |
| Good (median) | 80 | -----Good----- | 50 |
| | 79 | | 47.5 |
| | 78 | | 45 |
| | 77 | Good minus | 42.5 |
| ----- | 76 | | 40 |
| | 75 | | 37.5 |
| | 74 | Satisfactory plus | 35 |
| | 73 | | 32.5 |
| | 72 | | 30 |
| | 71 | | 27.5 |
| Satisfactory | 70 | Satisfactory | 25 |
| | 69 | | 22.5 |
| | 68 | | 20 |
| | 67 | Satisfactory minus | 17.5 |
| ----- | 66 | | 15 |
| | 65 | | 12.5 |
| | 64 | Fair Plus | 10 |
| Fair | 63 | | 7.5 |
| | 62 | | 5 |
| | 61 | | 2.5 |

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APPENDIX C

Award Fee Determination Notification Findings and Determination Sample

Contract _____

Decision to award additional fee pursuant to the provisions of ARTICLE _____ -
AWARD FEE of the above numbered contract.

FINDINGS

1. The Award Fee Evaluation Board, acting under the authority granted by the memo, subject: _____, dated _____, signed by _____ the Fee Determining Official, and acting within the intent of Article _____ of Contract _____, has completed its evaluation of the contractor's performance on said contract for the period _____ through _____. Based upon the evaluation developed by the Evaluation Board, the contractor has performed (during the period set forth above) the requirements of the contract in such a manner as to warrant the award of additional fee in accordance with the "AWARD FEE" provision of the contract.
2. The Award Fee Evaluation Board has assigned a numerical performance rating of _____ which relates to an adjective performance rating of _____. Details of the evaluation and basis for the final rating are included in the minutes of the Board Meeting dated _____.

DETERMINATION

Upon the basis of the findings set forth above, I hereby determine that, pursuant to the provisions of ARTICLE _____ -AWARD FEE, contract _____, _____, the contractor, is awarded additional fee in the amount of \$_____ for the period of _____ through _____.

(Name) (Date)
Fee Determination Official

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APPENDIX D

ATTACHMENT NO. 3 AWARD FEE DETERMINATION PLAN

SPACE AND NAVAL WARFARE SYSTEMS CENTER SAN DIEGO
N66001-00-R-5001
16 JUNE 2000

CONTENTS

PART

- I. INTRODUCTION
- II. DEFINITIONS OF TERMS AND ORGANIZATION STRUCTURE FOR AWARD FEE ADMINISTRATION
- III. OBJECTIVES OF THE AWARD FEE
- IV. EVALUATION PROCEDURES
- V. PERFORMANCE EVALUATION RATING GUIDELINES, CATEGORIES AND CRITERIA

ATTACHMENT 1 - GENERAL CHARACTERISTICS OF LEVEL OF PERFORMANCE

SPACE AND NAVAL WARFARE SYSTEMS CENTER SAN DIEGO
AWARD FEE PLAN
RFP #N66001-00-R-5001

I. INTRODUCTION

A. This is the Award Fee Plan for evaluating contractor performance in providing engineering, fabrication, integration, and installation services under the contract resulting from RFP #N66001-00-R-5001. The purpose of the plan is to outline the organization, procedures, and evaluation periods for implementing the award fee provisions of the contract.

1. The period of performance is estimated to be from January 2001 to December 2005.

2. The base fee is zero (0).

3. The maximum amount of award fee that can be received is 10% for elements (1) through (5). An additional 2% will be available for element (6), however, firms must receive an overall rating of "OUTSTANDING" on elements (1) through (5) to be eligible.

B. The amount of the award fee pool is established by setting aside a pool relating to the amount of the negotiated estimated budget (s). The award fee payment will be based on evaluation of criteria in six performance categories:

- | | |
|---|---|
| 1. Quality Products, Services, and Deliverables: | * |
| 2. Schedule : | * |
| 3. Personnel Management : | * |
| 4. Ship Systems Integrated Installation (planning, engineering, execution): | * |
| 5. Financial Management and Cost Control: | * |
| 6. Cost Savings | |

* Weights will be determined after contract award and are subject to change

II. DEFINITIONS OF TERMS AND ORGANIZATION STRUCTURE FOR AWARD FEE ADMINISTRATION

A. Fee Determining Official (FDO). The individual who makes the final determination of the amount of fee to be awarded to the contractor. The FDO will be the Commanding Officer, Space and Naval Warfare Systems Center San Diego (SSC San Diego) or his designee.

B. Performance Evaluation Board (PEB). The group of individuals who review the contractor's performance and recommend an award fee amount to the FDO. The FDO is the Commanding Officer, Space and Naval Warfare Systems Center San Diego or his designee. The PEB Chairperson will be D60. The PEB will consist of four members as follows: PEB Chairperson, and two technical members that will be Division Managers from D60 and a Contracts Branch Manager. The individuals will be designated after contract award. The PEB will be assisted by two, non-voting members: the COR and the Contract Administrator.

C. Contracting Officer's Representative (COR): The COR, who is a government employee, is a technically qualified, properly trained individual, designated in writing by the Procuring Contracting Officer to assist in the technical monitoring or administration of a contract and/or orders under a contract and administration of the Award Fee Plan.

D. Technical Representative (TR). The person who is the originator of the task and responsible for submitting input on each of his/her task orders to the COR for consideration in the evaluation process. The

COR will coordinate the collection and forwarding of the information to the PEB Chairperson. To maintain the integrity of the award fee process, TR's shall not be members of the PEB.

E. Procuring Contracting Officer (PCO). The PCO is responsible for initiating a contract modification so that the contractor may bill for fee.

F. Contract Administrator (CA). The contract specialist assigned to administer the contract is responsible for assisting the COR with: 1) receipt, processing and distribution of evaluation reports from all required sources; 2) scheduling and assisting with internal evaluation milestones, such as briefings; and 3) accomplishing other actions required to ensure smooth administration of the Award Fee Plan.

G. Defense Contract Audit Agency (DCAA). DCAA is a separate agency of the Department of Defense that is under the direction, authority, and control of the Assistant Secretary of Defense (Comptroller). DCAA's purpose is to provide accounting and financial advisory services, in connection with the negotiation, administration, and settlement of contracts and subcontracts, to all DOD procurement and contract administration activities.

III. OBJECTIVES OF THE AWARD FEE

A. The objective of the award fee provisions of the contract is to afford the contractor an opportunity to earn fee commensurate with optimum performance. In addition to providing special management emphasis to the "Evaluation Criteria" set forth herein, the contractor is responsible for striving to attain the highest standards of excellence in the performance of this contract.

B. The award fee is an amount that may be earned by the contractor in whole or in part based upon an evaluation by the FDO of the contractor's performance. Fee associated with overall poor performance on a specific task order will be removed from the award fee pool. All evaluated, unearned fees will be removed from the award fee pool at the conclusion of every award fee evaluation period.

C. Award fee determinations are not subject to the "Disputes" clause of the contract.

D. The FDO may unilaterally change any matter covered in the plan, provided the contractor receives notice of the change at least thirty (30) calendar days prior to the beginning of the evaluation period to which the changes apply. The changes may be made without formal modification of the contract. Changes might occur due to a change in management emphasis, recognition of a necessity to motivate higher performance levels in a specific area, or to improve the award fee determination process. The PEB will submit changes applicable to the next evaluation period for approval to the FDO with appropriate comments and justification.

IV. EVALUATION PROCEDURES

A. Award fee evaluations for physically completed task orders will be conducted with each prime vendor at the following quarterly intervals: 1 January, 1 April, 1 July, and 1 October. There will be occasions when a task order is not completed within one of these time frames and when that happens, a partial evaluation will be conducted and verbal input will be provided on work performed to date. Partial evaluations will involve a discussion of performance only and will not include fee. Final evaluation of these tasks will be performed concurrently with all other task orders that are completed in the following quarter. After the PEB reconciles all of the input on tasks that are completed during an evaluation period a quarterly meeting will be held with each prime vendor to discuss performance on each task in terms of the strengths and weaknesses. The evaluation procedures are described in the following paragraphs.

1. The COR shall coordinate with the TR's to obtain performance information consistent with the evaluation categories, criteria and rating guidelines in Part V. Written evaluations are required for each task that is completed during that evaluation period. Written feedback is also required for tasks in process but not yet completed. Vendors are encouraged to provide a written self-assessment, which shall not

exceed two pages in length. The self-assessment is not required but will be accepted no later than 20 calendar days after the completion date. The COR will reconcile all information and forward the documentation to the PEB Chairperson within 15 calendar days.

2. The PEB Chairperson shall schedule a meeting with all PEB members after receiving the evaluations from the COR. All backup documentation should be reviewed to determine that the evaluation was conducted in accordance with the evaluation criteria and the PEB should consider any self-assessments that have been received. Any inconsistencies should be reconciled and when the PEB has considered all pertinent information available they shall formulate their recommendation to the FDO.

3. The PEB Chairperson will then schedule a meeting to brief the FDO on the evaluation results and recommendations. This briefing should occur within 20 days from receipt by the PEB Chairperson of the evaluations and not later than 70 days from completion of the task. The PEB Chairperson shall brief the FDO on the significant positive and negative events or factors that occurred during the evaluation period and recommend an award fee amount. Also, the briefing to the FDO should include a summary of the ratings assigned, score sheets, narrative comments and all other back-up documentation.

4. As previously stated, a summary of the evaluations will be provided by the PCO to each contractor at least 14 days prior to the quarterly meeting. A quarterly meeting will be held with each prime contractor. The contractor is not required but may send a rebuttal to further illuminate any circumstances they feel are not fully explained. If such a document is not provided, any input shall be presented verbally to the FDO at the quarterly meeting. Also, the contractor will be expected to give an oral presentation to address their accomplishments, initiatives, process improvements and cost savings achieved. The quarterly meeting will consist of an oral presentation to the Contractor regarding specific areas of performance and the contractor will be given an opportunity to address the issues that are presented. Any performance issues will be reconciled between the parties within ten (10) days after the meeting with the FDO. The FDO shall consider all pertinent information and make a decision regarding the award fee amount within 15 days of the quarterly meeting. This does not preclude all parties from reaching consensus on performance issues at the time of the meeting. Participants in the quarterly meeting will include but may not be limited to the FDO, PEB Members, Technical Representative(s), the COR, the Contract Administrator, and Contractor personnel. Costs associated with the award fee process and quarterly meetings will not be reimbursed under this contract.

5. When the FDO reaches a decision, the PEB Chairperson shall enter the amount in the Award Fee Determination, sign it, and present it to the FDO for signature. The Contracting Officer shall prepare a letter to the contractor citing the key positive and negative factors in the evaluation, noting any areas of particular emphasis for the next evaluation period, and formally notifying the contractor of the award fee amount. This letter should be dispatched within fourteen (14) working days after the award fee decision is made. The letter will include vouchering instructions. In addition, a contract modification will be issued to formalize the decision. Upon receipt of the letter and modification, the contractor may bill for the award fee.

V. PERFORMANCE EVALUATION RATING GUIDELINES, CATEGORIES, AND CRITERIA

A. In order to evaluate the contractor's performance, general criteria have been developed. This section of the plan highlights the criteria and describes the overall rating process that is to be employed.

B. At task order completion, the maximum earned award fee that will be made available is 100%. However, it should be noted that this does not relieve vendors from providing all required close-out information and verification that all billings have been rendered.

C. Upon task order completion date, the contractor will be given ninety (90) days to provide any remaining outstanding cost vouchers and required documentation needed for complete close out of the task order. Any costs not billed by this deadline will not be paid until the close of the basic contract without special approval of the Contracting Officer. They may be presented at that time to the Contracting Officer who

determines payment. Full detailed and documented justification for not meeting the 90-day time period must be provided at the close of the basic contract. The exception shall be the final billing (debit or credit) of any indirect rates, which remain to be settled with Defense Contract Audit Agency (DCAA).

D. If work is added to an individual task order that is determined by the PCO to be outside the initial scope of services, award fee will be allowed. However, if there is a cost growth that is determined by the PCO to be within the initial scope of services for the task, there will be no adjustment to the task order's award fee pool. If work is deleted from the task order, the maximum award fee pool will be reduced in the proportion that the price for the deleted work bears to the total original price of the task order. Example: Value of task, \$50,000, assumes amount of (5%) award fee, at \$2,500. If task is reduced to \$40,000, award fee is reduced to \$2,000.

E. Attachment 1, entitled "General Characteristics of Levels of Performance" is intended as a guide to describe performance characteristics that represent a level of performance and a correlating range of award fee payment percentages. It is not necessarily intended that any of the listed performance descriptions would exactly describe the contractor's performance nor is it intended that a contractor's performance in all areas necessarily falls in any one level. Rather, the general characteristics of levels will be used as a tool to select the level of performance which best characterizes the Contractor's overall performance for the evaluation period. The contractor begins the evaluation period with 0% of the available award fee and works up to the earned award fee based on performance during that evaluation period. The contractor does not begin with 100% of the available award fee and have deductions taken.

F. The FDO is required to make a final determination of the overall fee total to be awarded to the contractor. Accordingly, the FDO has the flexibility to increase or decrease the overall award fee recommended by adjustments to:

1. The fee allocated to an individual task order due to extraordinary input from SSC San Diego or other sources.
2. The overall award fee based on trends in performance on all task orders or any general economic or business trends, which may affect performance capability.
3. Any other information the FDO determines is applicable to a final fee determination.

G. As described in Part IV, once the FDO has determined the award fee earned for each task, a letter will be prepared that includes a summary of both strengths and weaknesses observed and invoicing instructions for the award fee earned will also be provided at that time.

ATTACHMENT I
GENERAL CHARACTERISTICS OF LEVELS OF PERFORMANCE

QUALITY PRODUCTS, SERVICES AND DELIVERABLES; SCHEDULE;
PERSONNEL MANAGEMENT; SHIP SYSTEMS INTEGRATED INSTALLATIONS; FINANCIAL
MANAGEMENT & COST CONTROL AND COST SAVINGS

Level 1 - 80-100% of Available Award Fee (OUTSTANDING)

Performance of services and/or delivery of products was accomplished in a superior fashion. State-of-the-art engineering fabrication, and/or installation techniques were employed to accomplish tasking with a minimum of government direction or clarification. Changes were anticipated and problems were solved efficiently and effectively through contractor's initiative.

Early submission of accurate and complete deliverables. Excellent milestone planning and schedule control. Fast effective response to problem control and logistics. Ahead of schedule despite change in requirements.

Highly proficient management of personnel and subcontracted effort both on-board and in Navy/contractor facilities. Vendor always provides experienced, certified (as needed) workers appropriate for level of work. Outstanding cooperation, communication/interaction with Navy personnel and other involved parties. Goals for subcontracting to Small Businesses, Small Disadvantaged Businesses, etc. exceed the goals stated in the subcontracting plan for the basic contract. This will be determined by the amount estimated on a per task basis and the actual amount subcontracted for each task. Also, the overall average of the work subcontracted on all task orders performed to date will be considered.

Ship Systems Integrated Installation of individual systems was accomplished with highly effective planning and coordination with subcontractors. Integrated installation efforts will show all engineering, procuring, reporting, and execution accomplished in an exceptional and timely matter. Effective use of manpower demonstrated by analyzing each individual system to determine the optimal installation sequence. Noticeable savings in labor and funds shown by the effective implementation of an integrated installation task.

Continuous efforts by management to utilize past experience (learning curve) to reduce costs on new work. Highly efficient use of GFE (Government Furnished Equipment) and travel and other direct costs (ODC's) kept to a minimum level with attention to utilizing all available discounts. Prompt submission of final cost vouchers 30 days after physical close out. Contractor's management continuously strives to reduce indirect rates. Effective partnering with DCAA to resolve final rate issues.

Tightly controlled costs yield demonstrated savings from negotiated price of delivery order. Evaluation of this element will take into consideration any government requested changes to the scope of services that results in an adjustment to the delivery order price. Cost savings will be calculated utilizing the following formula:

| | | 10% Fee | 2% bonus | | Total Fee |
|-----------------|----------------|--------------|----------------------|--|--------------|
| | | | For 15% cost savings | | |
| BEDOP AMOUNT | \$2,000,000.00 | \$200,000.00 | \$40,000.00 | | \$240,000.00 |
| 15%SAVINGS | \$ 300,000.00 | | | | |
| TOTAL TASK COST | \$1,700,000.00 | | | | |
| TASK PLUS | | | | | |
| AWARD FEE | \$1,940,000.00 | | | | |

Level 2 - 50-79 of Available Award Fee (GOOD)

Acceptable technical performance and deliverables commensurate with the Statement of Work. Met all requirements successfully. Timely problem solution. Little or no technical direction given by the Navy.

On schedule despite changes in requirements. Timely notification to Navy regarding slippage. Timely deliverables and schedule control with some corrections and slippage.

Successful management of personnel and subcontracted effort both on-board and in Navy/contractor facilities. **Goals for subcontracting to Small Businesses, Small Disadvantaged Businesses, etc. meets the goals stated in the subcontracting plan for the basic contract.** Workers qualifications suitable for level of work. Successful cooperation, communication/interaction with Navy personnel and other involved parties.

Ship Systems Integrated Installation of individual systems was accomplished with routine planning and coordination with subcontractors. Acceptable integrated installation efforts will show all engineering, procuring, reporting, and execution accomplished with little or no problems. Satisfactory use of manpower demonstrated by analyzing each individual system to determine the optimal installation sequence.

Effective cost control, actuals close to estimates for individual elements. Proposals include labor categories appropriate to level of work. **No cost growth, overall task is completed within costs negotiated on the delivery order.** Effective use of GFE/GFP (Government Furnished Property). Travel and other ODC's kept to a moderate level. Submission of final cost vouchers in 60 days or less after physical closeout. Communication with DCAA to resolve rate issues.

Cost savings: Not applicable.

Level 3 - 20-49% of Available Award Fee (SATISFACTORY)

Products/services failed to meet one or more of the tasking requirements and required excessive Navy direction and/or re-work. Contractor failed to act in a professional manner to independently anticipate and solve problems.

Changes in delivery schedule, which caused significant problems. Lack of anticipation regarding possible problems or delays.

Adequate management of personnel and subcontracted effort with some inefficiencies. **Amount subcontracted to Small Businesses, Small Disadvantaged Businesses, etc. does not meet some of the goals stated in the subcontracting plan for the basic contract.** Limited cooperation, communication/interaction with Navy personnel and other involved parties.

Ship Systems Integrated Installation with problems with one or more individual systems. Lack of advance planning and coordination with subcontractors. Integrated installation effort show procuring problems, late reports, schedule slippage, and slow execution. Problems with manpower and how best to use it to minimize total actual hours.

Reasonable cost control with some increase in cost **up to 10% of negotiated price of delivery order.** GFE/GFP required replacement or repair. Travel and ODC's actual costs greater than proposed. Submission of final cost vouchers more than 90 days after completion of task order. Inadequate communication with DCAA.

Cost savings: Not applicable

Level 4 – 0% - 19% of Available Award Fee (POOR)

Products/services are inadequate for government requirements. Deficiencies so pervasive as to require substantial re-work. Contractor failed to act professionally. Contractor directly contributed to a safety hazard.

Failure to meet delivery schedule without notice of plan for correction. No contingency planning by management.

Failure to monitor personnel and subcontractors appropriately. **Amount subcontracted to Small Businesses, Small Disadvantaged Businesses, etc. does not meet any of the goals stated in the subcontracting plan for the basic contract.** Ineffective relations with Navy, other customers, contractors or DCAA.

Ship Systems Integrated Installation with problems with all systems. No advanced planning. Inadequate personnel to perform work. Extensive scheduling slippage.

Significant cost increases (**Greater than 10% of delivery order**) due to inadequate performance, little long-range planning, and lack of attention to cost control. Frequent purchase of CAP rather than use of GFE/GFP. Submission of final cost vouchers later than 120 days after completion of task order. Little or no communication with DCAA.

Cost savings: Not applicable.

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